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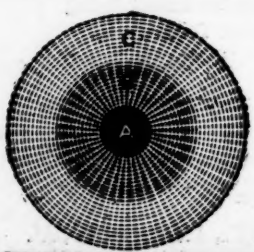

Diagram represents inflamed area. In zone "C" blood is flowing freely through underlying vessels. This forms a current away from the Antiphlogistine, whose liquid contents, therefore, follow the line of least resistance and enter the circulation through the physical process of endosmosis. In zone "A" there is stasis, no current tending to overcome Antiphlogistine's hygroscopic property. The line of least resistance for the liquid exudate is therefore, in the direction of the Antiphlogistine. In obedience to the same law exosmosis is going on in this zone, and the excess of moisture is thus accounted for.

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A Clinical Lecture
ON
TUBERCULOUS CERVICAL GLANDS.*

BY
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SURGEON TO GUY'S HOSPITAL.

TUBERCULOSIS of the cervical glands is probably always secondary to infection by pyogenic organisms, and would soon cease to be one of the common affections of childhood if better attention were paid to the treatment of septic adenitis in its early stages. Much has been done in recent years to eliminate oral sepsis by early treatment of affections of the tonsils and teeth, and there can be no question that as a result the number of children now seen with tuberculous glands is very much smaller than it was twenty years ago, but the fact remains that it is still very much greater than it ought to be.

It used to be taught that tubercle bacilli reached the cervical glands by direct passage through the lymphatics from the mucous membrane of the mouth and throat, but it is much more likely that they are carried by the blood stream in almost every case. If a direct spread from the epithelial surfaces were a common mode of infection, associated tuberculous lesions of the tonsils, etc., would be frequent instead of comparatively rare. It is fairly safe to say that in a crowded community like London every child has at one period or another tubercle bacilli circulating in its blood stream, which only need the chance coincidence of an area of tissue suitably damaged, either by trauma or sepsis, to enable them to settle down and develop a tuberculoma. Just such an opportunity is provided by the attacks of cervical adenitis so frequent in children, and thus it is hardly an exaggeration to say that every inflamed gland in a child's neck is a potential focus of tuberculous disease.

Anatomy of the Cervical Lymphatics.

It is, therefore, of the greatest importance to have an accurate knowledge of the paths of lymphatic drainage about the head and neck in order that simple infections of the glands may be traced to their source at an early stage and arrested by suitable treatment before they become dangerous, for it is in the chronic infections that the danger of tubercle arises.

The cervical glands are arranged in two main sets—a superficial and a deep—separated from one another by the deep fascia. The superficial set consists of three distinct groups—a suprahyoid group beneath the symphysis of the lower jaw, a submaxillary group beneath the body of the mandible, and a somewhat scattered collection along the course of the external jugular vein situated for the most part between the edges of the sterno-mastoid and the trapezius muscles. Of these groups the first two are concerned in the drainage of the buccal cavity, the teeth, tongue, lips, and face, while the third receives the lymphatics from the scalp, external ear, and the skin of the neck. The deep set of glands is situated along the course of the internal jugular vein in the anterior triangle of the neck, and drains the tonsils, naso-pharynx, pharynx, larynx, trachea, and oesophagus. It also receives communications from the superficial group, and probably a few vessels pass directly to it from the sources normally drained by the superficial glands.

If this very definite grouping of the glands be remembered it should not be difficult to locate in every case the cause of a septic enlargement. In my experience among hospital out-patients the commonest sources of infection in order of frequency are (1) the tonsils, (2) the scalp and external ear, and (3) the teeth. The one most frequently overlooked is the scalp, perhaps because it is not sufficiently recognized that the presence of pediculi is quite enough to cause enlargement of the glands without any obvious cutaneous lesion.

It is unnecessary to go into details of the treatment of these infections, which is simple enough as a rule, and I would only emphasize again the importance of dealing with them properly and with energy. It is, of course, possible to be too energetic, and the wholesale sacrifice of tonsils which is practised by many at the present time is, I think, an instance of quite unnecessary and probably harmful thoroughness. Hyperplasia of the lymphoid tissue in the mouth is a normal process in childhood, and undoubtedly serves a purpose, though it may not yet be understood exactly what this purpose is; and the still recent discoveries of the value of the secretions of the various ductless glands should warn us against labelling as superfluous any organ the precise function of which is not known. Doctors, and, I am afraid, particularly the medical officers of schools, are apt to overlook this fact, and it cannot be too strongly urged that to condemn tonsils on the strength of one or two attacks of acute tonsillitis with temporary swelling of the glands is entirely unjustifiable and reprehensible. As far as the glands are concerned the tonsils should only be removed if the glandular enlargement persists between the attacks of tonsillitis and after less radical measures of treatment have been given a thorough trial and have proved unavailing.

Diagnosis.

The diagnosis of tuberculous glands is fortunately, as a rule, a simple matter. Tuberculosis is the only common cause of persistent enlargement of the cervical glands in the absence of a definite focus of infection. Simple adenitis quickly subsides after removal of the source of infection, and I have not found it in any child on whom I have operated with a previous diagnosis of tuberculous glands. Glandular enlargement from Hodgkin's disease and other general lymphatic diseases is generally easily distinguished by the multiplicity of the glands affected, and in any case, if there be a doubt, the question can be settled without difficulty by removing a superficial gland for histological examination.

Clinically the cases fall into three groups or stages of infection, and from the point of view of treatment it is convenient to consider these three groups separately.

1. In the first or early stage the glands are discrete and can easily be counted; the muscles and skin are not infiltrated, though even from the first the glands may be adherent to one another and their mobility impaired. The earliest to be affected are almost always the glands in the upper part of the neck, but as time goes on the infection tends to spread downwards until a chain of nodules may be felt extending from the base of the skull to the clavicle. As a rule they are firm in consistence, though if they have been for long as large as a filbert nut there will almost certainly be central caseation in some of them and softening may be apparent, but if so the pus is confined within the capsule of the glands and has not spread to the connective tissue around them. Sometimes they remain for a long while in a state of latency, but there is generally a tendency to periodic outbursts of activity in which they swell up and become painful. Each succeeding exacerbation leaves them a little larger than they were before, and there is always a danger that during one of these attacks a cervical abscess may form.

2. In the second stage, the stage of abscess, the suppuration has involved the neighbouring connective tissue, especially the sterno-mastoid muscle and the subcutaneous tissue over it, in which collections of pus have formed. The glands near the abscess are no longer palpable as distinct entities, but are matted together in an indefinite mass which is fixed to the structures round it and is often extremely tender.

3. In the third stage, which follows quickly upon the second, the abscess has burst through the skin, leaving one or more discharging sinuses. The persistence or not of this stage depends upon whether the gland or glands from which the abscess started have been able completely to discharge their contents into it. If not, persistent sinuses will follow with the gradual development of contracting and disfiguring scars, and in some cases a spreading tuberculous infection of the skin.

Treatment of First Stage.

There are, practically speaking, two methods of dealing with tuberculous glands—operative and non-operative. The first aims at complete removal of the infected tissue

* This lecture was delivered some two years ago, and I publish it now because there seems to be a growing tendency to regard tuberculous glands as a medical rather than a surgical disease—that is, as one not calling for treatment by operation; a view which I consider to be wrong and likely to become dangerous if widely taught and acted upon.

by excision, while the object of the second is so to raise the patient's resistance that he is able to deal with the infection himself—in other words, to promote a natural cure. I have said that there is a tendency at the present time to teach that the non-operative method gives better results than the operative. I am entirely in disagreement with this view, and my main purpose in this lecture is to endeavour to establish the case for early excision. There are four main considerations by which we may compare the two methods:

1. The completeness of the cure achieved.
2. The length of time needed for the treatment.
3. The dangers resulting from it.
4. The accessibility of the treatment to individual cases.

1. A complete cure is claimed by the advocates of both methods, but I must confess that I find it hard to believe that tuberculous foci are destroyed by expectant treatment as completely as is generally taught. I so frequently see patients who have had "glands" in childhood which have lit up again in after life that I think it is much more probable that though the obvious enlargement of the glands may subside the tubercles are merely reduced to a state of quiescence, and that for a very long while after this apparent cure the bacilli remain alive and ready to recrudesce if given a favourable opportunity. After all, this is only what we see constantly happening with tuberculous foci in other situations, and it is unlikely that in the cervical glands the life of tubercle bacilli is shorter than elsewhere. The advocates of expectant treatment, it seems to me, draw too sweeping conclusions from the effects of non-operative treatment of tuberculosis of the spine and joints and the bad results which operative surgery has given in both these situations in the past. But here, surely, the conditions are not in the least comparable, for in spinal tubercle excision of the diseased tissue is, from the nature of things, impossible, and surgery is limited to the evacuation of pus and to the immobilization of the spinal joints, while in the case of tuberculous joints any attempt at excision is of necessity bound to upset their delicate mechanism and to result in a fixed or an unstable limb; and I have no doubt that if a radical operation could be devised which held out a hope of a good functional result the tedious process of waiting for a natural cure would very soon become a thing of the past. With early tuberculous glands in the neck the case is entirely different. A complete excision of all infected tissue can be made without interference with function and brings with it a sense of security in the knowledge that no tubercles are left to infect other glands in the neighbourhood.

2. The length of the treatment is perhaps not of such vital importance as the completeness of the cure, and no doubt for this reason little point is usually made of it. It is, however, of considerable importance, because, apart from the tedium and necessary expense of a long course of treatment, it must be remembered that the age at which tuberculous glands are most prevalent is also the age at which education should be taking a prominent part in a child's life, and any interference with the normal order of things is bound to hamper educational facilities; besides, removal of a child for a long period from its family is not as a rule desirable either for the child or for its parents. In older subjects the interference with their work makes time of still greater importance. There can be no question as to which of the two methods of treatment requires the longer time for its completion. Expectant treatment, if it is to have any chance of success, must be continued for many months or even years, while after excision a few weeks' convalescence by the sea are usually enough to restore complete health.

3. The dangers of expectant treatment are those which must inevitably arise from the constant presence of a tuberculous focus in any part of the body—that is, local spread of infection and suppuration, metastatic involvement of distant organs, and general tuberculosis. It is true that as long as the tuberculous process is in a state of quiescence—and the object of expectant treatment is to keep it so—the danger of complications is small, but with glandular tubercle it is not easy to ensure quiescence, however careful the treatment. A cold or a sore throat is quite sufficient to rouse the bacilli to a burst of activity, and it is quite impossible to avoid trivial ailments of this sort, no matter what precautions are taken. It stands to reason, therefore, that the longer the primary focus remains the greater is the risk of one of these complications developing. Fortunately, both metastasis and general dissemination are rare with tuberculous glands, but that is no excuse for ignoring them. Local spread of infection and suppuration may not in themselves be so dangerous, but there can be no question that they immeasurably increase the difficulties of treatment and sometimes make a complete cure impossible. Gland to gland extension is not altogether without serious consequences, for when the lower cervical glands are reached it is but a short step from them to those in the mediastinum, and I know of at least two instances of direct involvement of the apex of the lung by tuberculous glands in the posterior triangle. The unpleasant results of suppuration are known to all and need no detailed description.

Apart from the natural antipathy which the general public has to any form of cutting operation, a feeling which is easily understood but is for the most part purely sentimental and unreasoning, there are three obvious disadvantages to operative treatment: the risk of the anaesthetic, the resulting scar, and the possibility of injury to important nerves.

The danger from the anaesthetic is so small nowadays that I think it may be disregarded, whilst in an early case the scar left by the operation, if the incision has been carefully placed, is usually almost invisible after a very short time, and in the hands of a competent operator injury to important nerves should be out of the question. So I think it may justly be claimed that the risks from the operation are trivial when compared with those of waiting for a natural cure.

One other objection I have heard raised to operation is that excision of glands in the neck is useless because in tuberculous cases those in the mediastinum are always likely to be involved as well, and as these cannot be reached by the surgeon no operation can hope to achieve more than a partial removal of tuberculous tissue. I know of no reason to suppose that there is a particle of truth in this statement. All our experience goes to show that in the early stage only the upper cervical glands are usually tuberculous, and that it is by a gradual downward spread that the lower cervical and the mediastinal glands become infected.

4. Medical treatment, if it is to have any chance of success, must be carried out in ideal surroundings and under strict medical supervision—conditions which are by no means easily obtained in this country except by those who are able to pay highly for them. The vast majority of tuberculous gland cases occur among the poor in the large towns, and for these treatment in their homes is useless. Institutions for the treatment of surgical tuberculosis are few in number, and there are so many calls upon their limited accommodation by the more urgent types of tuberculosis that the chances of any but the worst gland cases gaining admission to them are small. The average surgical convalescent home is not suitable for cases of tuberculous glands, because the medical supervision at them is not sufficiently strict, and I can remember many instances of having to open cervical abscesses in children who had been sent to convalescent homes in the hope that their glands would clear up under the influence of fresh air and sunshine. Convalescent homes, too, owing to the demand on their beds, are rarely able to keep gland cases long enough to do any lasting good. So that while it is not a difficult matter for the well-to-do to obtain surroundings favourable to medical treatment, for the poor it is only possible in a very small percentage of the total cases. On the other hand, accommodation in hospitals is easily found for children requiring operations, and after excision of tuberculous glands they can safely be sent to any convalescent home without fear of untoward complications developing.

The foregoing considerations apply particularly to those cases in which only a small group of glands is tuberculous, and I think it must be admitted that for them on every count the case for operation is a stronger one than that for expectant treatment, and that operation should therefore be regarded as the method of choice. Exceptions may,

perhaps, be made in the case of the well-to-do, with whom the risks of waiting are relatively small, but even with them the length of time taken by expectant treatment is so great that operation is preferable.

When the involvement of glands is widespread and the disease has reached the lower members of the cervical chain, the question of treatment is harder to decide, because the golden opportunity for excision has passed, and not only are the operation risks, especially that of injury to the spinal accessory nerve, increased, but also the resulting scar is apt to be large and unsightly. In cases of this sort, unless there is some special reason for hurry, medical treatment should be given an extended trial, in the hope that even if not completely cured the glands may be so much reduced that a subsequent operation for their removal may be a relatively easy and safe procedure. But it must be clearly understood that extensive involvement of glands is a state of things which is easily prevented and only occurs as the result of pursuing the hopeless policy of waiting during the earlier stage, when the disease is localized.

I do not propose to discuss in detail the operations for excision of glands. Suffice it to say that there are two points which are essential: (1) all obviously enlarged glands must be removed; and (2) the incisions must be placed in such a way that they will be least noticeable when healed. Both of these essentials are readily secured if the case be taken early. If it be left until adhesions have formed, the difficulties may be such as to tax all the skill of the most experienced operator.

One is sometimes confronted with a case in which softening tuberculous glands are associated with tonsils which obviously require extirpation. Now, if the tonsils are removed in the hope that the glands will subside there is a very considerable danger that the operation in the mouth may precipitate a state of suppuration in the neck and lead to the formation of a cervical abscess. To avoid this unfortunate event it is best in these cases to remove the glands and the tonsils at the same time. The double operation has no deleterious effect on the healing of the wound in the neck, and the patient is thereby saved, not only the risk of a cervical abscess, but also the trouble and expense of a second operation.

Treatment of the Second Stage.

My remarks on the dangers of non-operative treatment during the first stage apply with still greater force when suppuration has occurred. It is true that aspiration, or repeated aspiration, of tuberculous pus may cause an abscess eventually to dry up, but the process is so slow and so uncertain in its result that I do not think this method of treatment is justified. Operation, to my mind, is clearly called for, and it only remains to consider how extensive an operation is advisable. It is obviously best, when possible, to excise the whole area of diseased tissue, and if the abscess is small and the mass of glands is not large or closely adherent to the surrounding structures this can usually be done without much risk. But if the abscess is a large one, and particularly if there is, as is often the case, a considerable amount of surrounding cellulitis, the risk of injury to important nerves by an attempted excision is so great that it is best not to attempt it. The safer course is to open the abscess widely, and then, having thoroughly scraped the walls of the cavity, to search for the opening by which it communicates with the caseating gland. This can generally be found and through it the semi-solid caseous material can be removed from within the capsule of the gland by means of a sharp spoon—a most important step, for unless the contents of the gland itself are evacuated a discharging sinus is certain to result. The wound is then sutured with a small drain at its lower end, which is removed after two days, by which time any oozing from the abscess wall will have ceased. Healing is usually rapid, and if only one or two glands are caseous no further operation may be required. In any case the cellulitis quickly subsides and any remaining tuberculous glands or infiltrated muscle can be excised, if necessary, at a later date.

Treatment of the Third Stage.

When sinuses have formed and the suppuration has reached a chronic stage, the only satisfactory course is to excise the whole mass of tuberculous tissue, and this should be done unless the area of disease is so wide that its excision would leave a gap too large to close. But it must be remembered that at this stage the tough adhesions between the glands and the neighbouring structures will have made the operation a very difficult one, which should not be undertaken by anyone who has not had a large experience of cervical surgery. If the diseased area is too large for excision it is possible, by opening up the sinuses and scraping out the caseous material from the glands to which they lead, to get them to heal, but to obtain a complete cure this must be followed up by a long course of heliotherapy and, if the skin is involved, *x*-ray treatment.

THE DIAGNOSIS OF MALIGNANT DISEASE OF THE LARGE INTESTINE.*

BY

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I FEEL encouraged to draw attention to this subject for several reasons: first, because it is a common condition, and secondly, because recent advance in methods of diagnosis and treatment have greatly improved our chances of dealing radically with cancer of the large bowel. Moreover, I have been much impressed, during the last few years, by the late stage at which these cases come to seek surgical advice. That the surgeon does not see these until a late stage—often too late—is generally admitted, and the fact is due to one of several reasons—namely, that the patient ignores the symptoms caused by the disease; that the symptoms are so slight as not to give rise to any trouble until the disease is advanced; or that the symptoms, whether slight or severe, have not impressed the practitioner sufficiently to lead him to make a thorough examination of his patient.

Mr. Wilkie[1] of Edinburgh recently, in an address to the Newcastle-upon-Tyne and Northern Counties Medical Society on diagnosis in surgery, made the following statement, with which I entirely agree:

> "Diagnosis is the crux of modern surgery, and that the latter is now attended with so much success is due, in my opinion, to the improved diagnosis of the general practitioner much more than to the advance in surgical methods and technique, great as these have been. One has but to consider the results of the operative treatment of urgent conditions such as perforated ulcers of the stomach and duodenum and acute appendicitis to realize this fact. The many patients whose lives are now saved by prompt operation should bestow their gratitude on the men who made the early diagnosis, not on the surgeons whose task was made easy."

This is quite in keeping with what occurs in the Royal Victoria Infirmary at the present day, which forms a striking contrast to the time, a few years ago, when I was house-surgeon, when it was common experience that the majority of cases of appendicitis presented themselves with abscess or general peritonitis, while now the pathology is nearly always limited to the appendix.

The diagnosis of carcinoma of the colon has certainly not kept pace with these cases of abdominal emergency. I have no hesitation in saying that the most successful cases of operation for cancer of the large bowel which have come under my care have been sent by a few enthusiastic practitioners who seldom miss an opportunity of making a complete examination, whenever symptoms, however slight, show themselves.

It is to the necessity of early diagnosis I wish to draw special attention, and to emphasize the fact that without the co-operation of the practitioner this is impossible; and that it is upon him the fate of the patient must largely depend. It is for him to say in doubtful cases that further investigation by one or other of the special diagnostic methods is essential to success in treatment.

What are the points of greatest importance that assist us in the diagnosis of a carcinoma of the large intestine, before laparotomy is performed? If a student be asked this question he will often give the following answer: A bismuth

* An address delivered before the Hartlepool Division of the British Medical Association on January 31st, 1924.

meal and *x*-ray examination; or a sigmoidoscopic examination; digital examination of the rectum, or abdominal palpation. It seldom occurs to him to give an answer that the history of the patient, carefully taken, should come first; and indeed it is often of more value than any other method of diagnosis, and should always have careful consideration. Following on this a careful examination of the patient should be made, and next, special efforts of diagnosis, which I will refer to later, may confirm or refute an opinion already suggested.

PATHOLOGY.

The symptoms chiefly depend on the type of growth and the portion of gut involved. Cancer occurs in certain portions of the bowel with greater frequency than others. My own series of cases support the statistics of others. They consist of 84 cases of malignant disease of the large intestine. Of these, 42 occurred in the rectum and 42 in other parts of the large intestine. Of the 42 cases other than the rectum, 21 (50 per cent.) occurred in the pelvic colon, 11 in the ascending colon, 4 in the splenic flexure, 3 in the descending colon, 2 in the transverse colon, and 1 in the caecum.

It will be seen, therefore, that cancer has a special affinity for certain sites, the rectum and pelvic colon being positions in which it is most commonly found, and though statistics vary considerably they are all agreed upon this point.

SYMPTOMS.

Intestinal obstruction—acute, subacute, or chronic—the discovery of a tumour, or bleeding from the bowel, are the chief indications of intestinal cancer. Whatever portion of the large intestine may be affected the symptoms resulting from obstruction are as a rule the first complained of; but in some cases obstruction never develops at all, so that we may divide the cases into three different groups, according to the symptoms these patients complain of when they first seek advice: (1) Those who complain of acute intestinal obstruction; (2) those who have subacute or chronic intestinal obstruction; and (3) those who have had no obstruction at all.

Of 42 of my cases, 8 were in the first group, 21 in the second group, and 6 in the third group. In the remaining 7 cases the history was not sufficiently definite to classify them.

In the early stages it is not necessarily pain, but rather the discomfort of an increasing constipation, necessitating the use of purgatives, of which these patients complain. An aphorism always impressed upon us as students by Professor Rutherford Morison was: "Increasing constipation of recent origin in an elderly person, only overcome by purgatives, suggests malignant disease of the colon," and this complaint demands thorough investigation if the patient is to have a fair chance.

Attacks of diarrhoea, apparently without cause, when chronic colitis may be suggested as the diagnosis, may also be an early symptom of obstruction in these cases. Later on, as the obstruction increases, borborygmi can be heard, and may be so loud as to be noticed by people anywhere in the room. It is unfortunately a fact that people afflicted with these symptoms, and without pain, very often fail to seek medical advice. As the growth gradually occludes the bowel the sense of discomfort increases and may be associated with alternating diarrhoea and constipation. Sir Berkeley Moynihan[2] remarked as follows:

> "It is a remarkable feature in cases of carcinoma of the colon that the patient is often able to localize the seat of the obstruction. He will describe the accumulation of flatus in a certain point of the intestine where the difficulty seems to lie, and may say also that a trickle of escaping fluid and gas is felt to be followed at once by relief."

I am able from my own experience to verify this; for example, I recently operated on a woman, aged 71, who complained for nine months of increasing constipation, loud rumblings, and wind rolling down the left side to a point in the pelvis. Invariably her sense of discomfort was complained of in the same area. At operation she was found to have a constructing carcinoma in the middle of the pelvic colon.

The pain of intestinal obstruction is familiar to you all. It is due to the contraction of the intestine above the stricture, and, like all spasm of circular involuntary muscle, is cramp-like in character. The pain of obstruction may occur at any time and has not always relation to the intaking of food. It may be only when obstruction is almost complete that pain is complained of, for as long as flatus is passed the patient can live under fairly comfortable conditions. It is interesting that out of 21 cases of malignant disease of the pelvic colon, 18 gave a history of pain like that resulting from intestinal obstruction as the first symptom. This could be expected, as the type of growth which occurs in this region is nearly always of the constricting variety.

Often sudden obstruction is due to the impaction of some faecal or foreign matter in the rapidly constricting growth, and the sufferer may obtain instantaneous relief from an enema. If left untreated, the whole colon above the stricture dilates and the greatest tension occurs in the caecum, which may result in gangrene occurring in patches, liable to rupture, and cause fatal peritonitis.

Carcinoma occurring in the ascending colon frequently gives rise to attacks of diarrhoea without pain, and may not cause obstruction at all until very advanced. It is in such cases that the patient becomes anaemic, and often to such a degree that he is thought to be suffering from pernicious anaemia until the true nature of the condition is brought to light by the discovery of a palpable tumour.

Haemorrhage as a result of a carcinoma of the colon is unusual and is more common in connexion with growths situated in the rectum, but it may occur as the first symptom in the case of cancer of the colon, and is often a godsend to the patient, as it may herald the discovery of the growth at its early stage, because the sudden loss of a quantity of bright blood is a symptom which cannot but alarm the patient and cause him to seek medical advice at once.

A few years ago I saw a man, aged 38, who complained that for six months he had passed large quantities of bright blood by the rectum, but haemorrhage occurred apart from stool and was at times accompanied by some abdominal pain. After sigmoidoscopic examination was made and nothing was seen, with the aid of an anal speculum it was found that he had several small vascular haemorrhoids, which I regarded as the cause of the haemorrhage and performed the operation of ligature for the cure of the condition. The day following I went on holiday abroad and on my return was surprised to hear the following story:

A week after the operation the patient had had another copious haemorrhage from the rectum, and this time accompanied by severe abdominal pain. Professor Rutherford Morison, who saw him in my absence and during an attack observed that the pain was spasmodic in character, found a tumour in the left side of the abdomen. He made the diagnosis of an intussusception due to growth, and operated forthwith. His diagnosis was confirmed, the cause of the intussusception being a small movable columnar-celled carcinoma in the descending colon. This was a lesson never to be forgotten by me, and I hope it may be remembered by all who are here.

On the other hand, blood may only be detected on microscopical examination of, or be seen adhering to, the faeces.

Although haemorrhage from cancer of the rectum is a common symptom, it seldom makes its appearance until the disease is far advanced. Then the blood is commonly found mixed with liquid faeces. It should be borne in mind that bright blood may be passed by patients suffering from cancer of the rectum and its origin be from haemorrhoids, and not from the new growth, but this must be regarded as exceptional.

The history of a case of cancer of the rectum offers a clue of the strongest diagnostic importance. The patient will tell you how, on going to the lavatory in the morning, he feels that he is about to have a normal motion, but, instead, the attempt at defaecation results in the passage of flatus accompanied by a little moist bloody fluid having the appearance of beef-tea. The relief attained only lasts a short time before his visit to the lavatory has to be repeated, and perhaps many times before he has gained sufficient relief to carry on his day's work.

EXAMINATION OF THE PATIENT.

An abdominal tumour, which is palpable in the case of cancer of the colon, is not always the primary focus. Occasionally a case presents itself with the primary growth in the pelvic colon and in a position that is not palpable, while a tumour is felt in the right side of the abdomen, which is a secondary deposit in the liver. Another abdominal tumour, other than the primary focus, may be felt in

the left iliac fossa, which is really a hypertrophied iliac colon, or a bowel laden with faecal matter due to the obstruction of a growth in the upper rectum or pelvic colon. Again, a tumour palpable in a case of colon growth, and, indeed, often visible, may be the distended caecum due to obstruction lower down. Here the caecum is resonant on percussion and often mobile from side to side. It varies in size and consistency. Tenderness of it suggests inflammation or ulceration and demands immediate treatment.

Growths of the colon are much more frequently palpable when cancer occurs on the right half of the colon than on the left, and this is explained in several ways. In the first place the character of growths found in the caecum and ascending and transverse colon differ from those on the left side, as they are larger and often of the cauliflower type, while those on the left side, as has previously been stated, form a tumour seldom larger than a walnut and present the appearance of a string tied tightly round the peritoneal coat of the gut (the signet-ring type). It must also be remembered that the splenic flexure and its adjacent portions of the bowel lie well under the costal margin, whilst the opposite flexure (the hepatic) in the right side is at the costal margin and is not tucked away under it.

Again, the pelvic colon lies normally in the pelvis, and, when the seat of malignant disease, frequently becomes fixed in the recto-vesical pouch or, in the female, adheres commonly to the pelvic genital organs. I should like to illustrate this from my own series of cases. If a vertical line be drawn through the middle of the transverse colon bisecting the large intestine, it will be seen that of the 35 growths 10 occurred in the right half of the colon, of which 9 were palpable, and 25 on the left side, of which 5 only were palpable.

Rectal Examination.

A rectal examination is an important part of the examination of every abdominal case. It is told of the late Mr. Jordan Lloyd that, anxious to impress on his students the importance of making a rectal examination, he used to say: "Gentlemen, if you do not put your finger in, you you will put your foot in it."

Often a growth in the upper part of the rectum can only be felt through the mucous membrane, the palpable mass being obscured by a Heuston's fold; or a growth situated in the pelvic colon may come to lie in the pelvis on or adherent to the front of the rectum and be palpable through the bowel wall. In such cases occurring in women additional help may be got from vaginal examination. If the statement has been made by another observer that he has felt a growth in the rectum, and you fail, on examination, to corroborate his findings, it will be well not to dispute the point until after a complete examination has been made.

I recollect the case of a middle-aged man admitted to hospital who for some months had been subject to attacks of abdominal rumblings and rectal tenesmus. His doctor, who saw him during an attack, felt a growth in the ampulla of the rectum. On admission to hospital the patient appeared to be well and free from symptoms. Rectal examination was negative. After an enema the rectum was again examined, and a constricting carcinoma, easily palpable, was felt low down in the rectum. The condition of affairs turned out to be a growth originating in the pelvic colon which was the cause of a chronic intussusception prolapsed into the rectum.

There is no part of the large intestine in which malignant disease is so difficult to get hold of in the early stages as the rectum, for there may be no symptoms until the patient has a large palpable liver full of growth. This is frequently the case when the primary growth occurs in the ampulla of the rectum and when a large mass encircles the lumen of the gut without giving rise to obstruction, and local and general spread of the disease has rendered a radical operation hopeless.

A patient, the subject of cancer of the rectum, although at best unfortunate, is less so when the neoplasm occurs in the upper part of the rectum, because the character of the growth simulates that found in the pelvic colon and obstruction occurs early, driving him to seek surgical advice before dissemination has commenced. Bearing on this point I should like to quote the following case:

A man, aged 56, consulted me for bleeding from the rectum when the bowels were moved, which he stated he had noticed for three weeks. The blood was in small quantities and he was under the impression it was the result of "piles." A week later he began to have diarrhoea, which persisted for three days, during which time he complained of tenesmus with the passage of flatus. He looked in good health, his appetite was good, and he had lost no weight, nor had he suffered the slightest pain. On examination in the lower part of the rectal ampulla, and within easy reach of the finger, was a large, hard, craggy mass adherent to the anterior rectal wall. It was so fixed that it offered no hope of resection, and this opinion was also given by a celebrated rectal specialist in London whom he also consulted.

This history, with the condition found, occurring in the case of a highly intelligent man, demonstrates the difficulty in getting a case at the early stage, for the reason that the disease may be, and often is, practically symptomless in the operable stage.

Glands in the neck may be found in the left posterior triangle secondary to any abdominal viscus—most commonly the stomach—and rarely in the case of the colon or rectum. They should, however, be looked for, and, if present, are found at the posterior border of the left sterno-mastoid in the region of the thoracic duct. Secondary tumours in bone are also rare clinically, although I once saw, in consultation, a woman from whom a surgeon had removed the rectum, by Kraske's method, three years previously. She appeared to be well, and showed no signs of local or abdominal recurrence, but complained of pain in two small nodules adherent to the vault of the skull over the parietal bones. A small portion of growth was removed under local anaesthesia for microscopical examination. The report was returned: "This is a columnar-celled carcinoma containing spicules of bone."

Differential Diagnosis.

Attention has been drawn to the resemblance between appendicitis and malignant disease of the right side of the colon, cases being reported by Rutherford Morison,[3] Grey Turner,[4] and others. Turner states that:

"A growth in the caecum may be associated with attacks like appendicitis. These attacks may be due to obstruction or to inflammation in the pelvic parts around, and this may go on to the formation of an abscess which may exactly simulate one due to appendicitis."

The following is an illustrative example:

A man, aged 27, came under my notice who gave a history that for several months he had not felt well, was unable to take his food as usual, and was constipated. Ten days before admission to hospital he complained of aching pain in his right lower abdomen, but not serious enough to prevent him carrying out his work as a labourer. Three days before admission the pain became worse, was paroxysmal, and was felt across the bowels, and he was unable to take food. He stated that he had had a similar attack six months previously which had passed off.

On admission to hospital there was a large tender mass in the right iliac fossa. The case was thought to be one of appendicitis associated with local suppuration, or tuberculous disease of the caecum.

Operation revealed a large growth involving the caecum and ileum, with a mass of malignant glands at the ileo-caecal angle. The lower few inches of ileum, together with the caecum and a portion of the ascending colon and glands, were removed, and the condition proved to be a round-celled carcinoma—a rare type of growth, and usually followed by a fatal result from dissemination within a year.

The patient made a good recovery from the operation, but died six months later at home from abdominal recurrence.

It is when cancer attacks the posterior wall of the caecum, or ascending colon, that early perforation with fixation and suppuration closely simulates subacute appendicitis. One is always suspicious of a fixed right-sided tender mass, and with comparatively slow onset in a patient over 40 years of age, and preparation, prior to operation, should always be made for complete excision of the right half of the colon in case the condition should turn out to be carcinoma without any gross suppuration. This is a type of case that, when admitted to hospital along with other emergencies, is apt to be diagnosed hastily and operated upon without due care and preparation.

Another mass occurring in the region of the caecum which may be most difficult to distinguish from cancer is hyperplastic tuberculosis of the caecum, and when this disease is suspected tubercle bacilli should always be looked for in the faeces.

As in the body elsewhere, syphilis, too, can so closely simulate cancerous growth of the intestine as to be indistinguishable until microscopic examination or antisyphilitic treatment and time have cleared up the diagnosis.

In the region of the hepatic flexure inflammatory masses associated with the gall bladder, kidney, and liver have to be excluded; these, as a rule, are to be recognized—that is, whether or not they are in the colon—by palpation of the abdomen under the fluorescent screen after the administration of a barium enema. The same method of diagnosis will assist in distinguishing growths of the transverse colon from malignant disease of the stomach, should the history of the case not be straightforward.

An intussusception, the result of a growth, may occur in any part of the colon and form a tumour out of proportion to the size of the primary growth, which is as a rule small and polypoid in type.

Of the lesions that simulate malignant disease of the left side of the colon we have the condition known as "diverticulitis," which, as you know, is due to multiple small pathological sacculi of the colon—in reality herniae of the mucous membrane through gaps in the muscular coat, the gaps, as a rule, being the openings for blood vessels as they traverse the intestinal wall. These small sacculi, usually the size of a pea, are much more commonly found in the pelvic colon, and although they occur in other parts of the large intestine they appear to develop more readily, and certainly are more likely to give rise to complications in this area than in other parts of the gut. In an old-standing case the mesentery is found to be very much shortened, the gut wall chronically thickened, and the appendices epiploicae, into which these sacculi frequently open, have become adherent to the gut and surrounding tissue.

A sacculus may be compared with a vermiform appendix, inasmuch as their pathological findings in some ways resemble one another. Many of the sacculi harbour enteroliths similar to those found in the vermiform appendix; ulceration may occur in these sacculi, resulting in local or general suppuration, and in a pelvic colon with dense hard fibrous walls deficient in active muscular tissue and very much narrowed in the lumen; indeed, so much so in some instances that intestinal obstruction occurs, which is most frequently mistaken for that due to carcinoma of the colon.

There is another type of case which, though rare, requires mention and serious consideration, as the diagnosis, though not easy, is important. The patient, usually of middle age, has not been well for weeks or months; often suffering from indigestion and getting thinner, but with indefinite symptoms. An attack of sudden abdominal pain drives him to send for his doctor. He vomits, it may be blood or "coffee grounds," and has abdominal pains with rumblings and increased peristalsis. He is constipated and belching wind, passing little by the rectum. The abdomen is swollen and tender, if not generally, in parts. At an early date fluid may be detected in the abdomen, and on rectal examination there is a hard nodular growth to be felt anteriorly (felt per vaginam in the female). This mass, however, is not a primary rectal cancer, but a deposit of growth in the recto-vesical pouch secondary often to a stomach cancer. The absence of violent peristalsis, the fact that after rectal examination faeces may almost always be found on the examining finger, that some flatus escapes by the rectum, the abdominal tenderness, the presence of fluid, the very ill condition of the patient, the fact that the rectum overlying the growth is not ulcerated, make it clear that a diffuse malignant peritonitis is present, that the patient will quickly die, and that any operation will bring no relief, but add to his misery and hasten his end.

The differential diagnosis rests on the history of the case.

Of special methods in diagnosis we have two, both most valuable at times, supplementary to the ordinary physical examination. I refer to the sigmoidoscope and the use of the x rays after the administration of barium meals and enemata.

Sigmoidoscopy.

This is very valuable in the diagnosis of malignant growths in the upper rectum and pelvic colon, and I consider it a method not employed to anything like the extent it should be. Its usefulness lies in the fact that growths are not only common in these regions but are seldom palpable by the rectum or abdomen. It is practically free from risk in skilled hands, and can be carried out without an anaesthetic with little more inconvenience to the patient than a digital examination of the rectum.

To ensure a clear view of the lower portion of the intestinal tract the patient should be prepared beforehand with a purgative, followed by an enema, and the necessity for this preparation is made clear when we consider how difficult it may be to obtain a clear view of a growth in a patient the subject of chronic intestinal obstruction, even after repeated enemata following on purgation. For all practical purposes the most suitable position is on the left side with the knees drawn up to the chest, with a sand-bag to raise the pelvis and the buttocks projecting well over the side of the table.

After the instrument is introduced into the rectum it must be passed further along the bowel by sight, for without this precaution it is possible to inflict injury of a serious kind upon the intestine—indeed, perforation and fatal peritonitis have followed its unskilled use. As a rule, in a normal case, no difficulty is met with in the passage of the instrument until just beyond the upper end of the rectum. At the entrance of the lower part of the pelvic colon the bowel often appears to end blindly, owing to a sharp anatomical turn about the level of the first sacral vertebra. To overcome this apparent cul-de-sac the instrument must be withdrawn for a couple of inches and again advanced in another direction until the valve-like aperture is found—and on no account must any force be used.

It may be that a growth seen through the sigmoidoscope is not typical in appearance, and when such is the case a small portion of the tumour should be removed through the instrument with long forceps and submitted to a competent pathologist for microscopical examination. This I have found most useful on many occasions in finally settling the exact diagnosis. It may be that on account of a suspicious history of malignant disease one is led to make a sigmoidoscopic examination, with the result that instead of a malignant growth one or more simple polypi are seen. As these simple tumours are so commonly found in association with cancer one is justified in opening the abdomen to explore the colon for a more serious condition.

X-ray Examination.

X-ray examination of the colon has made great strides during the last ten years, and it has been the means of altering our views as to the anatomy and physiology, and has assisted us very much in diagnosing the patholgical conditions to which the viscus is liable.

We are indebted to Cannon of America for many important observations on the peristaltic and antiperistaltic action of the colon, first worked out in the case of animals. He showed that the prevailing movement in the right half of the colon was antiperistaltic in character, and that a series of waves conveyed the fluid contents of the bowel back to the caecum; while the left half of the colon has its prevailing movement in the carrying onward of its contents towards the rectum.

In describing movements of the colon Case[5] describes the mass movement seen under the fluorescent screen, which he attributes to Holzknecht[6] as being the first to record it. The bowel is seen to lose its haustral marking and the contents are seen to form masses with rounded ends, the mass travelling over a considerable distance at about twice the rate of the peristaltic wave of the stomach. When the movement has ceased, the normal haustra make their appearance once more. These movements occur about six times daily. The movements of the colon are greatly influenced by respiration, and Case has noted that the contents of the colon are difficult to move by palpation of the abdomen, it being impossible to pass the contents of the ascending into the transverse colon.

By means of the x rays we have at our disposal two methods of examination—by the barium meal and the barium enema. The meal is the method to be employed where the function of the colon is to be thoroughly investigated; but where a definite stricture has to be located in the large intestine the enema is the method of choice.

The meal, when given by the mouth, may of course be of great value. When there is any marked obstruction this barium will show up on the proximal side of the stricture as a thick black shadow with a sharply defined rounded end, and later thin flakes of the metal may be seen escaping through the stricture, the dense black mass remaining for long on the proximal side. All barium meals should be verified a second time in order to avoid any fallacy.

It is an interesting fact that, however tight a stricture may be, as long as the hypertrophic compensation is good on the proximal side, and no great obstruction is present at the time the barium is passing along the intestinal tract, the salt will travel to the distal side of the obstruction in an amazing way. We must remember that a barium meal is not at any time palatable, and that any one the subject of carcinoma of the colon with obstruction is apt to be sick, and thus render the value of this method of diagnosis not practicable.

The method of giving barium by the rectum in the case of malignant stricture of the colon has this advantage over the mouth method—that it may be done much more quickly, and that long and frequent examinations are not necessary. It has for long been known that enemata given by the rectum will travel the whole length of the large gut to the caecum, and that on introducing a solution of barium sulphate into the rectum by the tube and funnel it will travel to the caecum within a few minutes. To enable this procedure to work satisfactorily the colon must be empty. The patient is laid flat on the back, there being no need to adopt the knee-elbow position. In the case of obstruction to any marked degree the salt will be arrested on the distal side of the stricture, enabling the site to be distinguished.

During the past few years I have had considerable experience in the use of barium enemata as an aid to diagnosis of malignant strictures, and although I regard it as a valuable method of examination in the diagnosis of the condition I feel that it is not to be relied on alone.

The following case is of interest:

A growth was located in the sigmoid; the patient was given a bismuth enema and the salt was seen to pass through the growth without delay to the caecum. Later, at the operation, when the growth was removed, the lumen was found to be reduced by half.

This is a point of great importance, showing that a growth producing partial obstruction does not necessarily interfere with the passage of the barium.

I recently saw a man, aged 58, who had been suffering from diarrhoea and rectal tenesmus for upwards of a year. There was occasionally blood in the stool, but never bright. He was seen by a distinguished radiologist, who administered a barium enema. The barium solution travelled the whole length of the colon to the caecum, and on account of the free passage of the salt along the bowel the radiologist reported that the patient was suffering from colitis, whereas on rectal examination the lower edge of a hard craggy carcinoma could be felt adherent to the bladder. This was verified by operation shortly after, when secondary deposits were found in the liver, and he died nine months later from general dissemination of the disease.

This case brings out several points:

1. How a most advanced cancer of the bowel will allow a barium enema to traverse it.
2. That the method of investigating the case was wrong; for had the history been obtained and a rectal examination made, and if necessary sigmoidoscopy, the diagnosis would have been clear.
3. Radiologists should not make a diagnosis on their findings alone.

It would be difficult to exaggerate the value of palpating the barium-filled colon under the *x*-ray screen in the diagnosis of lesions of the large intestine. The colon stands out in a dense shadow and can be freely moved about the abdomen. When an abdominal tumour is present its exact relation to the colon can be detected, for the visible colon is easily altered in position in relation to the swelling; so that it can be ascertained whether or not a tumour has its origin in the large gut. The method is useful chiefly in the case of tumours which are in the immediate neighbourhood of the colon, such as those of the kidney and pancreas, swellings in the psoas sheath, and for certain retroperitoneal growths.

Abdominal palpation, aided by sight, may be of great value, and all practical physicians and surgeons should be familiar with it.

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TWO CASES OF RAT-BITE FEVER.

BY

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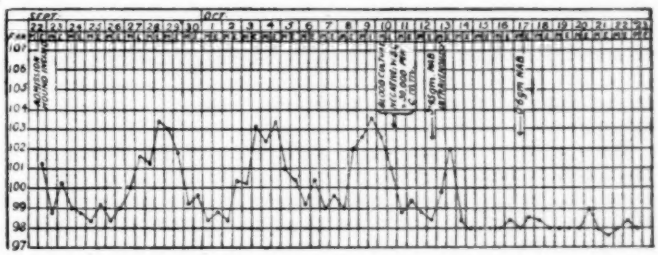
More than twenty cases of rat-bite fever have now been described in this country alone, and the clinical picture is well established. The following cases are recorded because in the first the disease was caused by the bite of a cat, and in the second the diagnosis was established by gland puncture during an afebrile period.

Case I.

A woman, aged 52, was admitted to the hospital in September, 1921. Three weeks previously she had been bitten on the back of the hand by a cat. The cat lived in a barn and was known to be a rat killer. One week before admission the hand became very swollen and was incised by her doctor. On admission to the surgical ward there was a granulomatous ulcer on the back of the hand with some cellulitis, and enlargement of epitrochlear and



axillary glands. The local condition rapidly yielded to treatment, but during her stay in hospital she had three bouts of fever, each of four to five days' duration, in which the temperature mounted gradually to 103° F. A fourth bout was aborted by an injection of novarsenobillon. Each bout of fever was accompanied by an eruption of purplish blotchy non-itching spots, as well as by headache, sore throat, and pain in back and limbs. The blood culture was negative, and during the fever there was a polymorph leucocytosis of 30,000 per c.mm. The spirochaete was not found in the blood, but it was not sought by dark-ground illumination.

I have found three other cases described in the literature of this country in which the disease was not due to the bite of a rat. In two cases it followed the bite of ferrets, and in the third that of a kitten which had been playing shortly before with the body of a dead rat.

Case II.

A farm labourer, aged 26, was admitted to the hospital in February, 1924. Five weeks previously he had been bitten on the hand by a rat while ferreting. The wound healed, but a fortnight later became inflamed and was incised by his doctor. It then healed rapidly, but a week later he developed sore throat with a temperature of 104° F. and red blotches all over his body. The fever subsided after several days, only to recur shortly before admission.

The temperature was 102.8° and the body was covered with large purplish macules which appeared to be already fading. By the following evening the temperature had fallen to normal, and there was no subsequent rise above 99° during the remaining ten days of his stay. On the third day, after the temperature had fallen to normal, Dr. Gibson punctured the epitrochlear gland with a hypodermic needle and injected a small quantity of sterile saline. He then removed a small quantity of gland juice, in which he was able, by dark-ground illumination, to demonstrate the presence of spirochaetes. Two days later the first injection of novarsenobillon was given.

These are the only cases which have occurred in the practice of this hospital since the war. As the hospital serves an agricultural area of about twenty miles radius, it is possible to form some idea of the frequency of the disease in this country.

I have to thank Mr. Bevers and Dr. Gibson respectively for permission to publish the notes of these two cases.

THE NATURAL DURATION OF CANCER.

BY

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AND

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In every instance where the value of a method of treatment in disease is under consideration a basis of comparison derived from observations in which no special treatment is applied is necessary. Sometimes, as in the case of acute intestinal obstruction and operation, or in that of diabetic coma and insulin, the comparison is sharply defined between life and death within a few hours. More frequently the question resolves itself into the less dramatic inquiry whether the given treatment relieves suffering or prolongs life, and periods of weeks or months are involved. Further, the matter is of importance for indicating whether the method of treatment is intrinsically sound, and therefore further advantage may be anticipated from increased attention to technique, or is intrinsically unsound and should be abandoned.

Such a provision of "controls" as a basis of comparison is of more than normal importance in cancer, where the question of "cure" or complete recovery is particularly uncertain. It may be quite impossible to promise cure in any individual case, and yet it may be fully permissible to indicate that, from consideration of a large number of cases, a given line of treatment is associated, on an average, with prolongation of life. And if such prolongation of life be accompanied by relief of symptoms, the method by which these two benefits are attained is not merely an advantage as it stands, but calls for additional research in order to magnify those advantages.

With a view to providing such controls for researches upon cancer treatment in general, and treatment by radiations in particular, we have analysed the records of the Middlesex Hospital over a period of forty years (1883-1922) and present the results of the inquiry in tabular form.

The natural duration of the disease in each case has been taken as that period which elapsed between the date of reputed onset as determined from the patient's history and the date of death. Cases in which operation was performed other than palliative (for example, tracheotomy, colostomy) have been excluded, and the same is true with regard to experimental lines of medical treatment (for example, soamin, trypsin, and amylopsin), but it was impossible to exclude purgatives, analgesics, and drugs of like simple character, nor was it considered necessary.

In a few instances where the patient had been discharged from hospital at his own request and the actual date of death was not known, a computation was made of the possible survival by careful consideration of the state of the patient on discharge; and lastly, where the reputed onset was unusually long or short, the case was reconsidered, and if there was reasonable cause for doubt was discarded entirely, otherwise it was retained.

In many instances where the reputed onset was separated by a long period from the date of admission it appeared probable that a pathological but non-malignant condition passed imperceptibly into malignancy. Such cases were found most frequently in the breast and cervix. In the breast a lump may have been recognized for many years prior to admission, but occasionally it is expressly noted that at some later date the mass took on increased growth. When such a statement was found in the records this later date was regarded as that of the onset of the cancer, otherwise the earlier date was utilized. Similarly in the case of the cervix it is often impossible to be certain whether the first symptom noted by the patient is due to changes at the menopause or to cancer. Hence it is probable the mean durations given in the table are somewhat overestimated for cancer of the breast and for cancer of the cervix about the menopause. Nevertheless, it appears certain that some cases of malignant disease last for a very long time. In the notes we have examined we have found one case of cancer of the cervix which lasted eighteen years from reputed onset to death, and fourteen of these years were spent in the hospital under constant observation. Another case of malignant disease of the pelvic bones was a patient in the cancer ward for over fifteen years, and many records of the local condition are found in the notes. The reputed onset in this case was ten years before admission. Both patients were admitted with clinical signs of undoubted cancer, died in the hospital, and autopsies were made. In spite of the unusual duration we felt that neither case could be regarded as non-cancerous.

Naturally it is desirable that such basic figures should not emanate from the experiences of a single institution, and we have reason to believe that values calculated on identical lines are being prepared by the Cancer Hospital, the Christie Hospital, Manchester, and the Glasgow Royal Cancer Hospital. When these have been obtained fairly reliable figures indicating the natural duration of cancer at the principal primary sites should be available for Great Britain.

The average durations were calculated for decennial age periods in all cases, but only such figures are given in Table I as are derived from a reasonable number of cases,

TABLE I.—*Natural Duration of Cancer at Certain Primary Sites Calculated on Age at Reputed Onset.*

Site.	Age.	Sex.	No. of Cases.	Natural Duration in Months.			Percentage of Cases below Mean.
				Mean.	Maximum.	Minimum.	
Breast	Under 25	F.	1	24.0	—	—	—
	25-34	F.	15	36.0	196	3	80.0
	35-44	F.	42	32.0	112	5	64.3
	45-54	F.	61	39.2	186	2	68.8
	55-64	F.	60	40.7	210	3	70.0
	65-74	F.	44	44.3	169	11	63.6
	75 and over	F.	20	36.1	64	12	50.0
Cervix	Under 25	F.	3	13.0	17	6	33.3
	25-34	F.	96	18.6	100	5	60.4
	35-44	F.	295	21.4	126	3	66.1
	45-54	F.	316	21.4	120	3	66.1
	55-64	F.	150	22.4	130	6	62.7
	65-74	F.	49	24.9	223	4	69.4
	75 and over	F.	7	11.3	21	5	57.1
Tongue and mouth	Under 25	M.	1	17.0	—	—	—
	25-34	M.	7	9.1	16	3	42.9
	35-44	M.	33	15.8	52	4	63.6
	45-54	M.	70	16.9	54	3	61.4
	55-64	M.	74	15.8	75	4	68.9
	65-74	M.	33	15.5	60	3	69.7
	75 and over	M.	7	16.3	37	3	57.1
Rectum	Under 25	M.	3	9.0	12	3	33.3
	25-34	M.	10	14.5	35	4	60.0
	35-44	M.	19	22.6	69	6	68.4
	45-54	M.	39	20.1	54	4	64.4
	55-64	M.	59	21.2	86	4	67.8
	65-74	M.	38	25.2	56	4	68.4
	75 and over	M.	4	24.0	38	6	50.0
Rectum	Under 25	F.	1	16.0	—	—	—
	25-34	F.	14	29.9	122	3	78.6
	35-44	F.	19	16.7	34	3	52.6
	45-54	F.	47	26.3	67	4	63.8
	55-64	F.	62	26.8	73	7	54.8
	65-74	F.	22	26.4	63	6	59.1
	75 and over	F.	8	32.0	109	10	62.5

When figures from the additional sources mentioned above have been obtained it may be possible to separate other primary sites on a decennial basis. For the present such averages as are derived from a small number of observations are given (Table II) as general means and only divided into males and females.

It is obvious that no detailed examination of the results is called for, but two facts seem to emerge: (1) that the earlier the age of onset the shorter the total duration of the untreated disease, and (2) that the natural duration of cancer at one and the same primary site is longer in the female than in the male.

In the case of cervix, breast, rectum (male and female), and tongue and mouth (male), where sufficiently large numbers were available, the cases were divided into two equal periods of twenty years—namely, 1883 to 1902 and 1903 to 1922—in order to determine whether the natural duration of the disease had undergone a change during later years. The differences were as follows: for breast, rectum

TABLE II.—*Mean Natural Duration of Cancer at Various Primary Sites.*

Site.	Sex.	No. of Cases.	Natural Duration in Months.			Percentage of Cases below Mean.
			Mean.	Maximum.	Minimum.	
Lip	M.	19	18.3	42	7	63.2
Tongue and mouth	M.	225	15.9	75	3	65.8
Tongue and mouth	F.	18	17.4	37	6	66.7
Cheek	M.	29	13.4	27	3	48.3
Cheek	F.	7	12.0	31	6	57.1
Pharynx ...	M.	32	11.8	26	3	56.7
Pharynx ...	F.	6	15.8	34	7	40.0
Larynx... ...	M.	44	14.0	40	3	55.8
Larynx... ...	F.	11	14.0	37	4	70.0
Tonsil	23 M., 2 F.	25	14.2	42	3	48.0
Neck	M.	36	9.4	37	3	51.4
Neck	F.	7	13.0	26	3	40.0
Parotid... ...	1 M., 3 F.	4	14.5	19	11	50.0
Thyroid ...	3 M., 2 F.	5	8.6	13	3	50.0
Oesophagus ...	M.	63	12.1	51	2	66.1
Oesophagus ...	F.	11	19.4	56	2	36.4
Stomach ...	M.	61	16.5	60	3	65.6
Stomach ...	F.	58	17.2	50	3	58.9
Colon	M.	32	16.0	51	2	53.3
Colon	F.	45	19.2	98	2	58.1
Rectum ...	M.	172	20.4	85	3	61.6
Rectum ...	F.	173	25.9	122	3	59.9
Peritoneum ...	1 M., 7 F.	8	19.4	53	4	62.5
Prostate ...	M.	17	15.4	46	6	66.6
Penis	M.	8	21.4	52	10	57.1
Testicle ...	M.	3	26.0	37	5	33.3
Scrotum ...	M.	3	23.0	29	15	33.3
Cervix... ...	F.	916	21.3	126	3	66.6
Corpus uteri ...	F.	28	24.2	88	5	42.9
Ovary	F.	22	15.1	38	3	57.1
Vagina and vulva	F.	57	22.1	181	5	72.7
Bladder ...	M.	22	26.9	101	2	71.4
Bladder ...	F.	18	15.2	44	4	55.5
Kidney	8 M., 9 F.	17	15.1	51	3	63.2
Liver and gall bladder	M.	7	13.0	26	7	60.0
Liver and gall bladder	F.	23	10.8	44	2	54.5
Pancreas ...	5 M., 8 F.	13	11.2	35	3	69.2
Breast	F.	243	38.4	210	2	59.3
Skin	11 M., 9 F.	20	19.4	39	2	60.0
Bones—short...	33 M., 20 F.	53	22.5	311	2	71.7
Bones—long ...	10 M., 5 F.	15	14.1	27	2	46.6
Muscle (sarcoma)	2 M., 1 F.	3	14.0	35	8	66.6

(male) and rectum (female) the mean duration was 9 to 13 per cent. *greater* during the second period than during the first, for tongue and cervix 1 to 5 per cent. *less*.

One final observation is necessary. The values in Table I are computed from the ages at reputed onset of the disease. Obviously, if this date were accurately known, the values would be absolute. But, since it is an uncertain factor, it must of necessity be reflected in the "natural duration." At primary sites, where cancer normally runs a rapid course, probably little difference obtains whether age at reputed onset or age at admission to hospital is employed. But in the breast, where many cases last a long time, such is not the case. For this organ the same series of 243 cases was compared under the two methods. The values obtained were as follows:

Age.	25-34.	35-44.	45-54.	55-64.	65-74.	75.
At reputed onset	36.0	32.0	39.2	40.7	44.3	36.1
At admission...	19.2	31.1	32.0	41.2	46.2	45.2

It is seen that, although the tendency of the disease to last longer as it occurs later in life is apparent under both methods of calculation, noteworthy differences obtain in several of the decennial age periods. And since age at admission is relatively of little interest, age at reputed onset has been adopted in all cases.

SPLENECTOMY IN A CASE OF SPORADIC ACHOLURIC JAUNDICE.

BY

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IN view of the somewhat variable results of splenectomy in acholuric jaundice the following case may be of interest:

A girl, aged 18, was admitted to the Manchester Royal Infirmary on November 19th, 1923, on account of chronic jaundice and attacks of abdominal pain. She was a healthy child until the age of 4, when jaundice was first noticed. She had been continuously jaundiced for fourteen years, though the intensity of the jaundice had varied somewhat from time to time. There was no history of clay-coloured stools or itching of the skin. As long as she could remember she had been subject to attacks of pain in the epigastrium and left hypochondrium. These attacks lasted a few hours at a time, were of considerable severity, and had become increasingly frequent of late. No history of any similar condition in any relative could be obtained.

The patient, a fairly well nourished girl, was jaundiced with a deep golden yellow colour of the skin and sclerotics. There was considerable enlargement of the spleen below the costal margin and slight enlargement of the liver. Bile was present in the blood serum, but not in the urine. The urine was bright pink, from the presence of urobilin, and the faeces a brick-red colour. The absence of obstruction in the bile ducts was confirmed by van den Bergh's reaction (indirect). The fragility of the red corpuscles was increased, haemolysis occurring with N/25 salt solution, whereas normal red cells haemolyse with N/35 saline. A blood count before operation showed:

Red corpuscles	3,056,000 per c.mm.
Haemoglobin	52 per cent.
Colour index	0.85
White corpuscles	9,400 per c.mm.
Polymorphs	69.6 per cent.
Lymphocytes	21.2 ,,
Large mononuclears	7.4 ,,
Eosinophiles	1.8 ,,

X-ray examination of the gastro-intestinal tract and gall-bladder region was negative. The Wassermann reaction was negative.

Operation.

On November 24th, 1923, Mr. Morley made a median incision above the umbilicus. The gall bladder and cystic duct were found to be filled with small soft pigment stones, but no stones were found in the common bile duct, which was not dilated. The spleen, which was four times its normal size, was not adherent, and was easily removed. The gall bladder was opened and the pigment stones removed. A tube was left in the gall bladder for ten days.

After-History.

Convalescence was uneventful. A week after the operation the jaundice, which had persisted for fourteen years, had vanished. A blood count on December 10th (seventeen days after operation) showed that the red corpuscles had risen from 3,056,000 to 5,048,000 per c.mm. and the haemoglobin from 52 to 78 per cent.

At the present time, seven months after the operation, the patient is perfectly well, and has remained entirely free from jaundice.

Histological Examination of Spleen.

Dr. G. E. Loveday reported as follows: "The sections show no obvious increase in the connective tissue stroma. The most marked feature is the general distension and patency of the sinuses. The tissue between the sinuses is infiltrated with blood, and the appearance suggests congestion rather than haemorrhage. The ordinary cells of the pulp are consequently scattered. The endothelium of the sinuses shows proliferation. The endothelial cells of the Malpighian bodies are not particularly proliferated, and the outline of Malpighian bodies is rather less defined than usual in some instances."

I am indebted to Mr. John Morley, under whose care the patient was admitted, for permission to publish these notes.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

John S. Fairbairn, M.B., F.R.C.P., F.R.C.S., President.

DISCUSSION ON METHODS OF THE ANTE-NATAL CLINIC AND THEIR APPLICATION TO PRIVATE PRACTICE.

OPENING PAPER

BY

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In opening this discussion on ante-natal supervision I propose to take as a basis the methods and results of a year's (1923) practice in the ante-natal department of the City of London Maternity Hospital, and to consider how far they might be applied to private practice. The time at my disposal is insufficient to enter into the educational value to the patients, great though this may be, and I shall therefore confine my remarks to the clinical aspect.

The ante-natal department was started in 1908, when the hospital was reorganized. The work of the department has gradually grown as its value has been more fully recognized by the practitioners and midwives in the neighbourhood and by the patients themselves. It will be clear that my personal experience of non-supervised pregnancy is small, and the results of its omission are exemplified by emergency admissions.

Routine examination is made of all primigravidae and all multiparae with a history of any abnormality in a past pregnancy or labour. The patients never object to examination, and never refuse to return for further examination if and when requested to do so.

As regards personnel, Mr. A. J. McNair and I are the responsible officers, but it sometimes happens that the resident medical officer or other substitute may take our place. In practically all instances when the likelihood of an obstetrical difficulty is foreseen the patient is referred to one of our senior colleagues, Mr. Comyns Berkeley or Mr. Holland, for a further opinion.

The subject of ante-natal work falls naturally under three headings: (1) the aims and objects; (2) the methods by which the aims and objects can be attained; and (3) the results obtained by these methods. Further, we can see that there are two definite phases or periods—the first from conception to viability of the foetus, which is concerned with the preservation of the pregnancy and of the health of the mother; and the second from viability onwards, when the aim is that of obviating untoward developments during labour.

Aims and Objects.

I suppose we are all agreed that one of the most striking developments of modern medicine is its change of outlook. Many of us as students thought that our chief duty would be to cure; the idea of prevention and all that it meant hardly crossed our minds. But now—partly, I think, as the result of our experiences in the great war, —our outlook is changed, and we daily realize what an important part prevention plays in the well-being of the nation. *Si monumentum requiris, circumspice.*

Once we accept this view, it behoves us as obstetricians to see that our branch of medicine does not lag behind; in so doing we shall more nearly approach the ideal that pregnancy and labour should be physiological processes ending in a healthy infant and an undamaged mother. Or, to put it more directly, our aim and object during pregnancy and labour must be the elimination of adverse factors, and, should such arise, to ask ourselves—if preventable, why not prevented?

First Phase—From Conception to Viability of Child.

I do not propose to enter into detail about the preventive aspects during this phase. I have not sufficient material from which to draw conclusions, as by the rules of the City of London Maternity Hospital patients are not seen until the twenty-eighth week unless their condition is really urgent. I feel sure that later speakers, especially those in private practice, will be able to tell us what proportion of patients seek their advice during pregnancy, what are the more common ailments, and how best they may be treated.

For ante-natal work to be successful during this first phase it is essential that our patients should come to us early—the earlier the better. We can only attain this end by educating and explaining to them that our advice is given in their interest. If we would only make a point of asking every patient who consults us late in her pregnancy to come early on the next occasion, and again when we cease our attendance after a confinement, I am convinced that our advice would be followed. Supposing we are consulted early, we must first of all find out if we are dealing with healthy material before we can proceed in our aim at keeping that material healthy. To this end the heart, lungs, and urine must be examined and questions put as to past history. In many cases when the medical history of the patient is known to her doctor a full examination may be unnecessary. Then a few hints as to personal hygiene should be given, including advice as to limitation of meat, with the necessary increase of carbohydrate in the diet and the ingestion of plenty of fluid. Next a warning that if anything abnormal happens, such as swelling of the feet and ankles, haemorrhage, or even if trivial discomforts such as constipation arise, the doctor is to be informed at once. Arrangements must be made for testing the urine at approximately monthly intervals, and a reminder that care of the breasts and nipples is essential will not go unrewarded at the onset of lactation. Equally we should be careful to say nothing which might frighten a patient. We all know the power of suggestion, so let us use it in assuring her of the improbability of anything abnormal happening in her case.

Of the major complications of early pregnancy reference need only be made to some of the more important.

Vomiting.—It is stated that about 50 per cent. of all pregnant patients suffer to a more or less degree from vomiting. My own view is that the cause is functional, and that for the slighter cases attention to diet, excretion, and the ingestion of fluid, accompanied by the suggestion of improvement or cure, suffices. For the more severe the discipline and suggestion of nursing home or hospital work wonders. In the absence of physical signs we should be chary of accepting a diagnosis of pernicious vomiting, even with the presence of acetone bodies in the urine, for such are commonly found in the urine of cases of starvation. But in using the word "functional" I do not wish to minimize the importance of the complaint. Successful early treatment will prevent the development of more serious symptoms.

Abortion.—It is believed that between 20 and 25 per cent. of pregnancies end in miscarriage, but we have no means of knowing what percentage of these is preventable. We all know that the amount of invalidism, temporary or permanent, produced by miscarriage is proportionately very high and depends largely upon whether medical advice was sought early or late. I see no prospect of improvement until our patients are educated up to two points: first, to place themselves under medical care as soon as they know that they are pregnant; and secondly, to regard any haemorrhage, however slight, as an indication for treatment. By the first we might hope to prevent the occurrence, and by the second the sequelae, of abortion.

Sometimes a general disease quite independent of the pregnancy may be discovered. I refer particularly to venereal diseases and tuberculosis.

Syphilis.—Frequently the secondary symptoms are slight and evanescent, so that the detection of the disease may escape recognition. The results of the Thavies Inn Clinic

have shown us that, given adequate treatment, a healthy infant can almost certainly be assured.

Gonorrhoea.—At the best of times the treatment of this disease is difficult and unsatisfactory, and the accompanying pregnancy makes it more so. Perhaps others who have had experience of this disease during pregnancy can tell us what are the best methods of treatment to pursue. I can only say that there is a very high mortality and morbidity after labour if the disease has been recently acquired. Our routine practice in all cases of venereal disease is to refer them to the special department of a general hospital.

Tuberculosis.—It is essential that this disease should be considered of urgent importance and the pregnancy second. Treatment will clearly depend upon the social status of the patient.

Morbus Cordis.—Undue breathlessness is the common symptom, followed by the usual train as compensation fails. If seen early and treatment commenced at once, these patients do better than is commonly supposed. Mild ambulatory cases are supervised by my medical colleague, Dr. Owen, and the more severe are referred to appropriate hospitals.

Complications of the Second Phase.

The total number of patients examined was 2,145, and of these 204 were found to have some abnormality which required treatment or some doubtful point which necessitated further observation.

Albuminuria.—The most frequent abnormality found was albuminuria, which occurred in 57 instances out of a total of 204 patients requiring treatment. At the onset of labour albumin was absent in 39, present in 13, and there is no record in 5. In 4 instances only was in-patient treatment deemed necessary. I do not suggest that all these patients should be classified as pathological, or that they would of necessity deteriorate without treatment, but I am sure it is wise to regard them as potentially dangerous. In no instance did eclampsia develop, but modern opinion tends to the view that in a certain number of these cases the damage to the kidney is permanent and will be revealed in later years.

Pyelitis of pregnancy is a rare disease with us. There was only one instance among these 204 as determined by bacteriological examination. But any patient complaining of pain in the iliac fossae with tenderness in the loin is at once given citrates.

Abnormal Presentations.—There was one shoulder presentation and two face presentations not recognized at ante-natal examination. The mothers were multiparae in whom there was no evidence of contracted pelvis. It seems likely that these presentations developed at the onset of labour, as not infrequently happens, and so would not be recognized by ante-natal examination.

Breech Presentations.—Our experience is that breech presentations occur more commonly than is usually thought. This may be explained by the fact that patients are first seen about the twenty-eighth week; many breech presentations would have converted themselves later on into vertex. The diagnosis may be easy if the physical characteristics of the head can be detected with certainty, but under a thick rigid abdominal wall with the head practically under the costal margin a certain diagnosis may be very difficult. It is in such cases that we may hope for assistance from *x* rays. The earlier that external version is performed, the easier it is. Towards the end of pregnancy an anaesthetic may be necessary, and it is advisable to raise the foot of the bed so as to dislodge the presentation out of the pelvis. It is true, I think, that the greater the difficulty in performing version, the more certain is the correction to persist.

Misfits.—The next group may be classified under the general heading of "misfits," the cardinal sign being the unduly high situation of the foetal head. Of these there were 24 instances. For the most part the patients were of under average physique with the type of pelvis so aptly called "under average"—that is, with no marked diminution in any one diameter. Occipito-posterior position is another common cause of high situation of the head, and is a source of constant worry when associated with an under average pelvis. One realizes that flexion will take place as labour progresses, but will labour start with rupture of the membranes because of the high situation of the head? In these two types the prognosis and treatment must depend on the accuracy in interpretation of physical signs—in other words, examination.

Occipito-posterior Positions.—No treatment is advised if the head is deeply engaged, because in this case it is assumed either that the child is small, or more probably that the head is already well flexed. If the head is high, the Buist method of rotation is employed. I regret that I have not kept records for a sufficiently long period, but my impression is that the rotation forwards usually follows the application of the pads and binder, but that there is no certainty of the rectification persisting. It frequently happens that, a week later, the back will be found posterior again.

Examination of the Pelvis.

I need hardly emphasize that examination of the false pelvis is based on the assumption that if the false pelvis is of normal shape and size, so also the true will be, and that if the false pelvis is abnormal, so also may the true be expected to be. Hence both shape and size are important.

I have found the following an easy and very satisfactory method of estimating the shape. Place the tip of one index finger on the tip of the anterior superior iliac spine and the other on the highest point of the crest. The distance between these two points should not be less than 2½ in., easily measured by the eye. The skin is then stretched along the outer edge of the crest between these two points; the normal curve has its convexity downwards and outwards with the patient on her back. An abnormally shaped pelvis will be detected at once from its failure to reach the above standard in one or both respects. To conclude the examination the pelvic measurement should be taken with callipers. If the callipers have been forgotten or mislaid, a sufficiently accurate estimation can be made if the length of one's span is known. By placing one end of the span on one spine, the distance of the other end of the span from the opposite spine can be measured or judged. I find that students by employing these methods can give, after very little practice, a reliable opinion both as to the shape and size of a pelvis.

Estimation of Fit of Head.

I must apologize for recalling to your memory such an elementary fact as the shape of the foetal head. It has two extremities, occiput and sinciput, and between these, on its circumference, the parietal eminence. I do not mean to imply that one can always feel these exact spots, and I use these terms as referring to these regions. The sinciput is always the more prominent and usually higher up—in fact, in a well flexed head it may be the only one to be felt. With regard to the parietal eminence, it is clear that it will have to pass behind some part of the pubes, and so the relationship of these two bones may be important. To identify these points I use my palm placed flat on the hypogastrium for the parietal and the tips of my fingers pressing in either inguinal region for occiput and sinciput. If the head is deeply engaged the finger-tip must be pressed firmly downwards and backwards in the axis of the brim.

To illustrate the importance of noting these facts, let us assume that we are examining a primigravida at thirty-seven to thirty-eight weeks in whom the head is barely engaged. Two possibilities will cross one's mind to account for this condition: the pelvis is contracted or the head is too big. Examination of the false pelvis may show it to be slightly under average but not enough to call it definitely contracted. Examination of the head shows that both extremities are easily palpable and about equally prominent, and that the parietal is well above and seems about flush with the pubes. The badly flexed head has increased the length of the long diameter of the head which fits badly into an undersized pelvis, but the relation of the parietal to the pubes shows that there is no great disproportion. To make certain the palm of the hand is placed on the parietal and the patient sits up and leans

well forward. Nearly certainly it will be found that the parietal has descended or even sunk behind the pubes. Such a case is left alone, as examination has shown that the head will pass the brim, and feeling that I should not obtain any further information I should not make a vaginal examination. Those who have conducted an ante-natal clinic will recognize a fairly obvious occipito-posterior presentation from the above description.

Take another illustration—a slightly smaller pelvis, the head well flexed and the parietal occupying the same level and giving the impression of overhanging the pubes. On sitting the patient up, the head sinks a little, but the parietal lodges on the pubes without overhanging—a highly suitable case for induction of premature labour. Or, in a more extreme case with the parietal definitely overhanging, the indication would be for Caesarean section at term. My point is this—that the head may be expected to mould half an inch without undue stress on the foetal tentorium, and that the guide to this most important half-inch is antero-posterior thickness of the pubes. Such importance do I attach to this relationship of parietal and pubes that I am in the habit of teaching that a palpable parietal is to be regarded as a warning during pregnancy and a danger signal in labour. That it is sufficiently accurate I know, as I have decided for and against Caesarean section by its application alone.

I hesitate to say much about vaginal examination in these cases, for probably each will decide for himself by which method he obtains the necessary information. There are the diagonal conjugate, Munro Kerr's method, the depth to which the head can be pushed down and the space between the pubes and the head. Though using all, I fancy I obtain more information from the two last, but whichever method is employed it is essential to push the head down in the axis of the brim. The findings by vaginal examination should be regarded as confirmatory, and unless the head engages well very little information will be obtained. Personally I find that I rely more and more on the results obtained by abdominal examination.

Treatment.

Induction of labour was practised for high position of the head in 24 instances—5 at approximately full term, and 19 at dates varying from thirty-six weeks onwards. All the mothers recovered, and there was one stillborn infant. The forceps was needed on one occasion only. I realize that there must be two schools of thought as to the correct treatment of these cases: one which thinks that every patient should be allowed to fall into labour spontaneously, and to decide during labour the line of treatment to be adopted; the other, of which I am one, thinks that if the onset of labour be delayed, prolonged labour with overmuch moulding of the head or else a difficult forceps delivery will be the result, whereas slight prematurity in an infant does not very much matter if it be delivered undamaged. I cannot help thinking that the latter method more nearly approaches the physiological ideal. Perhaps one is unconsciously biased from the results of emergency cases when one feels over and over again that these difficult cases might have been avoided by a timely induction.

Caesarean section for cases with grosser deformities of the pelvis or for bad obstetric histories was performed on 13 patients; all recovered. The number is too small for conclusions, but it suggests that if by supervision this operation can be performed at a set time on a clean patient, its risks are no greater than any other straightforward abdominal section. We are all aware of the high maternal mortality if the operation is performed on infected patients, and how this mortality increases with the duration of labour.

Post-maturity.—Labour was induced on 16 occasions for this reason. There was no maternal or foetal death. The experience of hospital practice is that definitely post-mature foetuses are apt to die during labour, and not necessarily from difficulties due to large size or obstetric complications. Owing to uncertainty of dates it is not always possible to decide when labour is due, so the general rule is adopted of inducing 300 days after the last reputed period. The height of the uterus and other signs are taken into consideration.

Ante-partum Haemorrhage.—There were three cases undiagnosed before onset of labour. Our routine is to advise slight cases to rest at home as much as possible and to return at once if haemorrhage recurs, and to admit the more severe for observation. I find that, as a rule, examination discloses very little—in fact, I have only twice diagnosed a placenta praevia with certainty before dilatation, and then because I could feel that there was more than the vaginal wall between my finger and the presenting part. I shall be very interested to know what is the opinion of others on the treatment of these cases. I have sometimes thought that after thirty-six weeks treatment should be active, that one should dilate under an anaesthetic and get a finger inside the uterus. The advantages of knowing whether a placenta praevia was present or not would outweigh the disadvantages of a possible premature labour.

Avoidance of Emergencies.

Turning now to the results of non-supervised pregnancy, I would draw your attention to the three common types of emergency admissions and illustrate them by actual examples.

Mrs. C., a primipara of small stature but strongly built. The measurements of her pelvis were: interspinous 9¼ in., intercristal 10¼ in., external conjugate 7¼ in.; the sacral promontory was out of reach, but the pelvis gave the impression of being on the small side. She had been in labour for sixty hours when a fruitless attempt to deliver her with forceps had been made. On admission the pulse was 116, and the temperature 99.8°. She was much exhausted with few pains. On examination the head was found to be fixed in the brim. The vagina and perineum were badly lacerated. Four hours later the head had reached the cavity, from which it was extracted with much difficulty. The child was dead born, with a large hard head, its circumference being 15 inches. Convalescence was long and tedious, and the patient left hospital on the thirty-second day.

Mrs. E. S., 2-para, was admitted for swelling of legs and albuminuria. She stated that no foetal movements had been felt for a week. On admission she had oedema of the legs; blood pressure 165; Esbach 14 per 1,000. Five days later she was delivered of a macerated foetus. On discharge the urine contained a trace of albumin, which has since disappeared.

Mrs. K. P., 5-para, was admitted for ante-partum haemorrhage which had started eight days previously with a sudden profuse loss, which had continued more or less since that date. On admission she was very anaemic; pulse 120; foetal heart not heard; marginal placenta praevia felt. Version was performed and the child was dead born. The patient made a normal recovery.

I think you will agree that comment on such cases is needless and that we can only prevent them by supervision. It may be urged that one is unduly biased as a result of hospital practice and experience, and that one's view is consequently narrow. If we turn to the recently published Report No. 25 on Maternal Mortality, by Dr. Janet Campbell, we shall find the importance of ante-natal work and the results of its omission stressed over and over again throughout its pages. On page 88 there is a short account of 60 fatal cases from the Liverpool Maternity Hospital. Only the most hardened sceptic could fail to be convinced after reading this paragraph. Among her conclusions, Dr. Campbell writes as follows:

"In a large number of maternal deaths there has been a failure at some point to practise proper supervision. Often omission occurs before childbirth, there has been a lack of ante-natal examination and watchfulness, and what might have been a comparatively simple event becomes one of desperate urgency."

We can all picture in our minds that "desperate urgency" in private practice. Everything is against us from beginning to end. Sent for late, we have to act in a hurry, worried by the patient's relations; skilled assistance is often absent. It is difficult even to be clean, much less carry out our usual antiseptic routine. Can we be surprised if the "desperate urgency" ends in a calamity? It is then that we realize the truth of the old saying, "Prevention is better than cure." There is no need to enlarge upon the application of hospital methods to private practice, for they are essentially the same. I suggest that the determination of physical health is better carried out in the consulting room, where everything is at hand and where our advice makes a greater impression on a patient. Specimens of urine can be brought to us at stated intervals for testing purposes. Examination for the prognosis of labour had better be carried out in the patient's home. It is not difficult for her to be in bed if we arrange a definite time.

By this means we have the opportunity of inspecting the room in which the confinement is to take place and seeing if it is suitable, and it is not too late to make suggestions for its improvement if we are not satisfied.

I hope that the evidence I have put forward is sufficient to convince you that in the patient's interests there can be no two questions of the value of ante-natal supervision. That in itself is enough for us. But if we look at it from the lower level of our own personal interests I think we shall come to the same conclusion. Much of the unpopularity of midwifery at the present time is due to its uncertainty—we are suspicious of an unpleasant surprise, somewhere, sometime, and when the case is successfully over we are correspondingly thankful. Our ante-natal work should, and does, remove much of this worry. To find at our last examination of a primigravida that the head is deep in the pelvis is a most comforting sign. We know that nothing much can go wrong and that there can be no desperate hurry when we are summoned. Or we might find an abnormal presentation or the head too high—we have ample time to consider what to do, to seek advice or assistance; and who of us would not rather perform external version or insert bougies at his leisure, and with the saving of his nervous system, than deal with the same condition during labour as an obstetrical emergency? But again, none of us is infallible, and so there are bound to be certain oversights, which will disappear as with practice we become more efficient. After all, we have been trained to draw deductions from symptoms and physical signs, and that is all that ante-natal work consists of.

In conclusion, two points seem to me to follow as a sequence: the first is that, if by ante-natal work we can prevent or minimize the complications of pregnancy and labour, there ought to be a fall in the mortality from these causes, and if by the same means we can reduce operative interference to a minimum there should be a corresponding fall in septic puerperal mortality and morbidity rate; and the second, that the obstetrician of the future will be of a different type from his ancestor. He will not be famous because of his knowledge and skill in dealing with emergencies, but rather by his application of these attributes to their prevention.

May I, as opener of this discussion, be permitted to suggest the lines on which it might profitably be continued? In the first place, I hope that all who disagree with the ideals or the methods advocated in this paper will not hesitate to express their reasons for doing so. In the second, that those who agree with me, and especially those who have practised ante-natal supervision, will give the meeting the benefit of their experience and results, be the latter good or bad, remembering that practical suggestions, however small, may be of the greatest help in overcoming the difficulties of others.

I now leave behind me all doubts and debatable points for the sure ground of tradition. Annually we meet for the purpose of friendly discussion in the sure hope that by so doing we shall add to that common stock of ideals or of practice, which is our heritage, something to the advancement of our knowledge, and so to the honour of our profession. Then shall our time have not been spent in vain.

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ANTE-NATAL METHODS IN RURAL PRACTICE.

A MEDICAL practitioner is not justified in accepting service for a confinement if the size of his practice, the state of his health, or his other preoccupations are to be made an excuse for his failure to carry out those measures of ante-natal care, attendance during the actual confinement, and post-natal watchfulness which are in accordance with modern knowledge and hospital practice. There is no responsibility, out of the many shouldered by the general practitioner in the wide range of his activities, which can compare with the obligation which he assumes in undertaking maternity practice, and yet I doubt if any field in the domain of medical science is more lightly considered, whether it be by the medical schools, who pass men into the world of general practice to struggle to the realization of their obligations through the disasters of their early years, or by the busy practitioner who, in the hurry and bustle of his harassing life, treats this, the most vital part of his work, as a side-show, and often as a nuisance.

Graduating in 1906, it was 1915 before I fully realized the importance of the maternity side of my work and came to the conclusion that if engaged for a confinement that confinement must, in view of the responsibilities involved, have a first claim upon my time and my thoughts. The practice over which I preside includes a somewhat lowland part of the Scottish Highlands—namely, the Easter Ross District. It involves an average of 3,700 visits and 2,400 consultations per annum, and this means an average of 11,200 miles travelling. Since 1915 my average number of confinements per annum has been 77, and of these 33 per cent. were primiparae. The practice involves an attendance upon 1,100 insured persons, and the bulk of the work lies over five miles from my home. The class of patient is, in the main, fisherman, farm labourer, and crofter. Many of the people live in one-roomed cottages with a closet off, and the majority have not more than two rooms. In very few houses are there conveniences of any kind, water being taken in from outside wells or pumps. The practice is therefore typically rural, with all the difficulties of distance and locomotion which such a practice entails, and the question I have to answer is, Can I, singlehanded, give in such a practice the necessary time and care as will satisfy the ideals upon which this paper is based? I unhesitatingly answer in the affirmative; not only so, but I find that ante-natal care, and the knowledge which it gives, not only removes the anxieties of my practice in these cases, but simplifies my procedure, and, in the end, makes my actual work less. The contention that in general practice there is no time for ante-natal care I find baseless, as I have also found the statement that patients resent such attention. Nothing in life interests a prospective mother like the preparations in anticipation of her first baby, and the doctor who gives the requisite attention to ensure ultimate success wins a place in her heart which time enlarges. I must confess, however, that even yet the lay mind is not fully awakened to the importance of ante-natal care, but it is gratifying to feel, with the passing of the years, not only a keener appreciation of its value, and an earlier engagement of my services, but a growing tendency to take it for granted.

I shall now come to the actual details of my practice when engaged for a confinement, and shall deal with the subject under two heads—namely: (1) ante-natal care; (2) preparations for the actual confinement.

When engaged for a confinement I make an early visit to my patient, and have a talk with her. I go fully into her past health history, and make a thorough physical examination of heart, lungs, and breasts, carefully examine her abdomen, and make inquiries as to her past menstrual history, and her freedom or otherwise from vaginal discharge. If I have previously delivered her much time is saved as I have full notes, and my only duty will be to remind her of points previously explained, emphasizing any important factor to which her past history compelled attention. At this interview I calculate the probable date of confinement, arrange about a nurse, and draw the patient's especial attention to dress, diet, exercise, baths, regulation of bowels, morning sickness, preparation of nipples, and such symptoms of pathological significance as pain in abdomen, haemorrhage from vagina, sudden pallor, swelling of lower eyelids, etc. I instruct her about the importance of supplying me regularly with samples of urine, and conclude my visit by leaving with her a printed pamphlet explaining the points discussed, and detailing shortly what she ought to do should any of the mentioned pathological symptoms arise.

I again see my patient about the fifth month, when I confirm or otherwise my previous estimate of the probable length of her pregnancy, make careful external pelvimetric measurements, the mere doing of which gives me a good idea of the capacity and form of her pelvis, again examine her heart, insist upon the importance of frequent examinations of the urine, and conclude by an examination of the abdomen, generally confirming or correcting the impressions as to prognosis formed at my first visit. At this visit I go into details about the preparations for the confinement, and see the actual bed. These preparations I detail in Part 2 of the pamphlet which I leave with her, and I shall discuss them later.

Unless my findings or her summons as the result of some pathological state developing compel an earlier attendance, I pay

my final ante-natal visit, as nearly as possible, a week before the expected confinement. At this visit I again completely examine heart, abdomen, and pelvis, and satisfy myself as to the actual relation of foetal to maternal parts. This enables me to undertake any measures that my examination may have rendered necessary for facilitating delivery, and I am usually able to visualize the course of the confinement, and so know and anticipate, when called to her bedside, what my actual difficulties, if any, are likely to be. I again go over details of the preparations for the actual confinement.

It is difficult to put in words what all this has meant to me, such details in general practice being incomplete in many respects, but I can truly say that my whole mental attitude towards my confinements has been changed. I can now face them without any misgiving as to what is before me, and I have been rewarded by uninterrupted good fortune. Guidance in heart, renal, and even dyspeptic cases has not only made all the difference to the prospective mother, but has warned off dangers to her and her child, and our combined knowledge and confidence in one another has removed difficulties at one time ever present with me. Since 1915 I have conducted 680 confinements, of which 224 were primiparae, and I have only had 11 stillborn children. I have had no maternal deaths, and no puerperal fever. In that series there were 3 monsters, 2 cases of spina bifida, 3 cases of eclampsia, and 4 cases of ante-natal albuminuria not terminating in eclampsia. In 13 cases labour was premature, and in 14 cases I had to remove the placenta manually. In 212 cases forceps were used, and in 151 cases I had to repair the perineum. This latter I do in every case of ruptured perineum, however small it may be. The series further included 18 breech cases, and 4 shoulder presentations.

My preparations for an actual confinement are based upon my belief that a clean patient, clean outside with a cleaned-out bowel and an empty bladder, with clean bedclothes covering a clean bed in a clean room, with an efficient nurse in attendance, undergoes little danger of contracting the infection of puerperal fever provided the doctor has a clear forehand conception of his procedure, and carries out his ideas with reasonable skill.

The patient, however poor, can provide clean clothes for her bed and her body, can have her body clean, including the removal of vulval hair. Her nightdress is tucked up under her armpits, and she wears a clean petticoat slit down the back. The bed is supported by boards, previously got ready, slipped under the mattress or spring, and the mattress is covered with thick brown paper or waterproof sheeting. The under bed sheet is also covered with thick brown paper or waterproof sheeting, and a broad draw-sheet is placed under the mother. Lysol, one pound roll of cotton-wool, and two deep basins, one often borrowed from a neighbour, with abundance of hot and cold water, complete the arrangements.

All this seems simple, but, as my instructions carried out in every detail are vital to success, they have to be fully explained before the confinement, and I leave with patient and nurse a pamphlet fully detailing my requirements, so that when I arrive for the actual confinement it is my custom to find all in order. In the early days of my practice I met difficulties and ignorant opposition, especially at the hands of the old-fashioned "howdie" or handywoman, and upon one occasion had to take the serious step of leaving a patient in actual labour because my instructions had been ignored. The fact that I had taken this drastic step soon spread abroad, and I have had no trouble since.

In all cases, when labour starts I insist upon a dose of castor oil followed by a large enema, the latter repeated as necessity demands. I also require the bladder to be frequently emptied.

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Major, R.A.M.C.

MATERNITY WORK AMONG SOLDIERS' WIVES.

THE question I propose to ask, and answer, is "What is the maternal mortality when every pregnant woman, whether normal or abnormal, is examined and watched ante-natally, and then confined in an institute with modern obstetric technique?" Putting it simply, "How many mothers die if you can conduct pregnancy and parturition on more or less ideal lines?" My answer is that about one in two thousand is the unavoidable death rate. These conditions now prevail in a certain small section of our population—namely, in the case of the wives of soldiers in the British Army, and I can give you the result of the four years, 1920 to 1923 inclusive, of the maternity work centred in the Louise Margaret Hospital, Aldershot.

During these years the number of women confined in the hospital was 1,850. There were not more than four women confined in the hospital who had not attended the ante-natal clinic. Of the women who had attended the ante-natal clinic and were also confined in the hospital there was one death from pulmonary embolus on the seventh day, following septic infection of an incomplete perineal laceration, the result of forceps delivery. Even this death may have been preventable. If I include the cases of officers' wives who attended for ante-natal examination, and were then confined in the hospital or at their own homes, we have a total of just over 2,000 confinements with one death amongst those who were watched ante-natally.

I now have a significant remark to make. Two other deaths in connexion with pregnancy did occur inside the hospital. Both were women from outside of our district; both were left, as it were, on our doorstep in a dying condition, and neither had been examined ante-natally. One had just arrived from the North of England, was brought up from the railway station, and died before the commencement of labour from advanced double mitral disease. The other was a woman brought in by ambulance from fifteen miles away, dying as the result of ante-partum haemorrhage. She had engaged a midwife for her confinement and had not been examined ante-natally.

I expect we have all heard the remark that there is no time for ante-natal examination in private practice. My experience amongst women of all classes is that nowadays they not only expect it, but talk about its omission. Several of my friends have told me that they only examine primigravidae and women with bad obstetric histories. I heard this remark a few weeks ago at an ante-natal clinic, and at my request the first multipara, who was about to leave the room, was put upon the examining table, and revealed a breech presentation that was easily turned. I think it was worth doing, because although her last baby was born head first and quite all right, her first one was stillborn and she thought it had come feet first.

To return to results. Out of the 1,850 mothers who, strictly speaking, came under my own combined ante-natal and obstetric supervision there was one death. I think it is as well to forestall the remark that we must have been dealing with an unusually normal and healthy lot of women. I do not think this was especially the case, and should imagine that they were a very fair average. We had many difficult cases to deal with. Most of our troubles were detected ante-natally, and therefore deprived of much danger.

Caesarean Sections.

There were eight Caesarean sections, in all of which the mothers and children lived. They comprised: two for more or less central placenta praevia, one of these two was diagnosed before bleeding occurred; one for cervical growth, followed by hysterectomy; and one for degenerating fibroid in the uterine wall. The remaining four were for contracted pelves.

Toxaemias.

As regards the toxaemias of pregnancy: during the first year there were three cases of eclampsia with fits, all lived; during the second year, one case; during the last two years no case occurred, but several women were admitted during pregnancy with pre-eclamptic symptoms of various kinds, and recovered to go through normal labours. I find blood pressure a most useful practical guide in treating these cases.

Forceps.

We used forceps in about 7 per cent. of the cases, mostly primiparae. A whole-time medical officer at a hospital can avoid using forceps much more easily than in private houses, hence one of the arguments in favour of confinement in hospital.

Breech Cases.

In the ante-natal clinic I turned fifty-four breech presentations into vertex by external version without anaesthesia, and I think there is a risk in using anaesthetics for this purpose. It may be possible to cause accidental haemorrhage by separation of the placenta. In three cases in which I failed to turn without anaesthesia I had no better success when it was used. The foetal legs were extended.

In order to emphasize the fact that our cases were by no means all plane-sailing, I may mention a 24 lb. baby that I had to deliver. It was delivered intact and undamaged, but there was delay with the huge shoulders and it was stillborn. The mother's perineum was not very badly lacerated. Ante-natally I mistook it for twins; owing to the associated tense hydramnios accurate palpation was impossible.

Sepsis.

During the four years no case of puerperal septicaemia occurred. In 1920 there were three border-line cases of fever during the first ten days of the puerperium, due to septic infection, in addition to the case of pulmonary embolism already mentioned. There were no rigors, but there was pyrexia up to 103° F. with offensive lochia. *Bacillus coli* and staphylococci were cultured from intra-uterine swabs: the blood cultures were all sterile. All these cases were normal by the fourteenth day, and were treated by swabbing out the uterine cavity with 1 in 500 acriflavine solution, on one or more occasions within twenty-four hours of the appearance of pyrexia.

Outlets.

I would like to lay stress on the importance of examining the outlet in all primigravidae, because it is often neglected. Recently I met with a primigravida, aged 43, with pelvimetric measurements very little below the normal. The head at the thirty-eighth week could be made to engage in the brim, but the bony outlet in the transverse was only two and a half inches. Caesarean section resulted in a happy mother with a male child.

We never meet unwillingness to attend for ante-natal examination. The women notify the matron when they are pregnant, on printed forms obtained from a welfare centre, stating the date of their last period. Our lady visitors, usually officers' wives, and the district nurses soon taught the women why it was necessary for them to attend, and a woman needs to be very dull indeed not to recognize the advantage of trying to avoid trouble. Requests are frequently received asking for permission to attend for examination and reassurance that "all is well" from women in no way entitled to it.

If we are agreed upon the value of prophylactic midwifery and intend to reduce our maternal mortality and morbidity, then money, brains, and hard work will have to be expended in organizing a national system. Ante-natal supervision for all women must be organized by medical men and women, who will soon become proficient at this particular work. Maternity beds in hospitals with separate nursing staffs have to be provided for the ante-natal treatment of the toxaemias, etc., as well as for difficult cases. Nothing short of this will suffice even as a commencement.

Ante-natal Equipment.

My ante-natal equipment consists of a pelvimeter, stethoscope, urine-testing outfit, sphygmometer, and rubber gloves.

Personally I believe the time will come when only the very well-to-do, who can afford suitable rooms and two nurses, will have their confinements at home, and that the majority of civilized women will be confined in maternity hospitals, with all facilities for improved and safe obstetrics, with medical attendants and nurses who are not in a hurry and know their job. Hurry spells disaster in obstetrics, and how many practitioners are there who can possibly avoid being in a hurry? The better the man the more he is sought after—the greater his hurry. Vast sums of money and much thought have been expended on safeguarding us from the danger of our own excretions. Our hygiene experts and sanitary engineers have perfected our drainage and sewage systems and provided our houses with modern lavatories for this natural act to take place safely. If some of this money and thought had been expended on provision for hygienic parturition, we might have advanced beyond our present state. I maintain that our most competent midwives, single-handed and with domestic surroundings, cannot conduct even a normal case in safety from the point of view of necessary cleanliness. They just do the best they can and bear the stigma of reproach when their cases "go septic." It is no good bemoaning our present maternal mortality unless we make up our minds to fight for sweeping changes and costly reforms; that alone will make parturition safe. In the meantime, I think a lot can be done by starting with the half measures suggested above—namely, systematized ante-natal work.

The future will require much more of us if we are going to stamp out a death rate of about one mother for two hundred and fifty births. Our already overtaxed country is spending much money on its most unfortunate incurables and imbeciles, but is it spending a sensible amount on securing healthy and sound mothers for our race? I think our most practical obstetricians are to be found amongst our general practitioners throughout the country; but we cannot conduct safe midwifery any more than safe surgery in the homes of the poor, and our difficulties under our present system, or lack of system, are overwhelming. But ante-natal examinations can be arranged.

Last week I visited one of Germany's largest and most modern gynaecological and obstetrical hospitals, with a total of 160 beds. They averaged 2,000 confinements a year since the war. The death rate per thousand births in the hospital was between twelve and fifteen. The professor remarked that septicaemia was much more common than before the war; and in reply to inquiries regarding ante-natal routine examination he said that if women felt ill during their pregnancies they came to the hospital, but there was no systematic ante-natal work or supervision. The hospital buildings are superb in construction and almost extravagant in their magnitude, but in details of technique, cleanliness, and order I saw nothing to approach our best English hospitals.

In conclusion, I think our outlook is quite hopeful because we are more or less unanimously agreed on the main points concerning what ought to be organized, and the lines upon which improvement may be expected to follow. That alone is something achieved already. We have, as it were, assembled at the starting point, and a good bombardment of the public with our ideas will be a helpful preliminary to the launching of our schemes.

GENERAL DISCUSSION.

Dr. RHODA ADAMSON (Leeds) said that her personal experience of the practice of the ante-natal supervision of pregnancy came under three headings: (1) The ante-natal department of the Leeds Maternity Hospital, comprising the out-patient department at the hospital, where were seen patients booked to be attended in the hospital and on its districts, those sent up for an opinion in consultation, and also the ante-natal beds in the hospital, to which were admitted patients from the out-patient department and also patients sent in as urgent cases by general practitioners and the municipal pre-maternity clinics. In the year 1923 the number of attendances made by patients booked for delivery in the hospital was 4,958. In addition, the Leeds Maternity Hospital was the recognized centre for the treatment of venereal disease in association with pregnancy, whether booked for attendance at delivery in the hospital or not. (2) In her own private practice for twelve years she had been in the habit of supervising the pregnancies of her patients on exactly the same lines as those followed in hospital. (3) During the war, for ten months she had organized a pre-maternity department in an engineering factory of the Ministry of Munitions. This experimental scheme came to an end shortly after the armistice when forty women had been employed under it. Their medical supervision was exactly on the lines of an ideal pre-maternity

clinic, and, in addition, their whole daily or nightly work could be organized according to their physical and mental capacity. The history of these 40 women was interesting and instructive—38 women had 39 living children: their histories of previous pregnancies had not been so favourable. Two women had dead children; of these one woman was known to be a breech presentation which had recurred after two attempts at external cephalic version: at the end of her factory day's work she went home and cleaned down the house. She went into labour at the thirty-sixth week, and the child was stillborn owing to delay in delivery of the after-coming head through a partially dilated cervix. The other woman had had one child born with instruments alive, and following this miscarried three or four times in the middle months of pregnancy. She was found to have deep bilateral lacerations of the cervix. At the seventh month she did two weeks' household washing one evening, and gave birth to a feeble premature child that survived only a short time. She had never encountered any difficulty in inducing patients to submit to ante-natal examination. In addition to verifying the fact and duration of pregnancy and taking pelvic measurements, she always examined for the presence of a vaginal discharge, and took blood for the Wassermann test if required. She had come to the following conclusions as to the common defects found in cases in Leeds. Considerable rickets present in Leeds before the establishment of infant welfare centres had led to many cases of contracted pelvis in women now being delivered in hospital. During 1923 there were 1,493 deliveries, and Caesarean section was performed in 36 cases; many others were admitted as possible Caesarean sections and given the benefit of a trial labour under supervision with good results. Induction was carried out three times. Toxaemia of pregnancy was very common, and early cases yielded to treatment. Most of their eclamptic cases were sent in as urgent cases from outside after inadequate supervision before its onset. During 1923 there were 55 cases admitted for albuminuria with 26 living children; 24 eclamptic with 13 living children; and 12 pre-eclamptic with 8 living children. In addition, there were numerous cases which yielded to treatment as out-patients. Ante-partum haemorrhage due to placenta praevia was frequent. During 1923 there were 24 cases with one maternal and 20 foetal deaths; this year she had had 12 cases since June 1st. She had not found that many cases came through their ante-natal department, but mostly as urgent cases from outside. She had been able in many cases to identify the position of the placenta by abdominal examination and vaginal touch through the undilated cervix.

Their ante-natal venereal diseases department had been most helpful in reducing the incidence of purulent vaginal discharges at the time of labour, minimizing the incidence of ophthalmia neonatorum and septic manifestations in the mother. Every case with a history of previous miscarriage or stillbirth was subjected to a routine Wassermann examination. Those cases proving positive were treated during the whole pregnancy. Those with strongly suspicious histories, though with negative Wassermann reaction, were still treated and further examined, sometimes with a change of reaction—for example, out of 188 negative Wassermann reaction cases 57 were treated in 1923. It was noticeable that in Leeds the type of syphilis appearing in the mother was mild. In view of the frequent discovery of abnormalities in pregnant women subjected to systematic ante-natal care, she would also strongly urge the general adoption of supervision of these patients.

Mr. Aleck Bourne (London) said that cases of ante-partum haemorrhage occurring in late pregnancy with a non-engaged head or breech presentation should be regarded as cases of placenta praevia and treated by termination of pregnancy as soon as convenient. If the head was engaged, and especially if albumin or oedema was present, the patient should be treated by rest, dieting, and sedatives. With regard to pelvic examination, he believed in the use of the pelvimeter provided the value of the various diameters was appreciated. He attached little importance to the anterior diameters, but laid stress on the external conjugate and posterior interspinous, the latter being a fairly accurate index of the width of the sacrum. Vaginal examination should be made in all primigravidae to eliminate possible obstructions, deformity of the outlet, and vaginal discharge. Contraction of the outlet apart from deformity of the brim was a very real thing, and could only be detected by vaginal examination.

Dr. A. F. Martin (Bradford) said that the following points, in his own experience, bore on the discussion: (1) Pelvimetry had helped, even if only the interspinous and intercristal measurements were taken, to relieve anxiety, and, in pointing to possible dangers, leading to examination nearer term in those cases where the difference was less than 2 cm., to determine whether the head entered the pelvis easily or not. Pelvimetry had not helped in estimating the pelvic outlet, and vaginal examination did not give enough definite information. If the head was not entering at the end of the eighth month induction was called for. (2) Induction could be done at this date without interfering with the vitality of the child in better-class practice. (3) Eclampsia could be avoided by routine examination of the urine, backed up by systolic blood-pressure observations in those cases where the albuminuria was increasing. A rising blood pressure in spite of treatment was an indication for induction. (4) Maternal anxiety was lessened if the mother could be assured that most of her pain could be saved by a well conducted obstetric anaesthesia.

Dr. T. H. Richmond (Stoke-on-Trent) insisted that ante-natal work was an art and not a mere science, and could only be properly accomplished after much practice. Callipers were important, but could not replace the foetal head in estimating whether labour was going to be an easy process or not. Accurate information by palpation could only be attained by very considerable practice. The diagnosis of a breech might be a very difficult matter indeed. *X* rays should be of considerable help here, but a lateral view should be obtained with the patient sitting up. Too much reliance could not be placed on auscultation as a means of diagnosing the position of the foetus; he thought that vaginal examination was absolutely essential. He advocated induction in every case where possible rather than Caesarean section. His experience was that pyelitis was relatively common. It would take many years before the ideal put before them by Major Moss—treating every labour in an institution—could be attained. In the meantime, abnormalities should be recognized by ante-natal examination and treated in hospital, while normal cases could be confined in their own homes. In conclusion, he warned them not to create a set of ante-natal hypochondriacs by alarming their patients unduly; this was happening now in America.

Dr. R. W. Johnstone (Edinburgh) referred to the pioneer work of the late Dr. J. W. Ballantyne of Edinburgh in this connexion. The older obstetricians were inclined to think that ante-natal observation meant merely the testing of the urine and the examination of the pelvis; but the more ante-natal care was practised, the more obvious had it become that there were many other conditions to be attended to. He gave a short summary of the work of the ante-natal department in the Royal Maternity Hospital, Edinburgh, in the year 1923-24, during which time many cases of pyelitis, hyperemesis, cardiac and pulmonary disease, had been admitted to the ante-natal department, in addition to a large number of cases of albuminuria. Of fifty-eight cases of albuminuria, including pre-eclamptics, admitted for treatment, only one had actually developed eclamptic fits, although several others had had labour induced as a prophylactic measure. With regard to the question of disproportion between the head and the pelvis, he thought that Mr. Willett had treated pelvimetry rather cavalierly, and he was inclined to deprecate the rough-and-ready methods of estimation which the opener of the discussion advocated. He advised a vaginal examination in all cases, as thereby one could rapidly estimate the diagonal conjugate, ascertain by Munro Kerr's method exactly how the head entered the

pelvis, and at the same time exclude any abnormal conditions of the soft tissues. In minor cases of disproportion induction of labour was practised, and he drew attention to the value of the pituitrin method as being particularly applicable to private practice. He began by sensitizing the uterus with several doses of 5 grains of quinine in solution, then one ounce of castor oil was given, and an injection of pituitary extract commenced some two hours after the castor oil had acted. The pituitary extract was injected in 0.5 c.cm. doses at intervals of twenty minutes to half an hour, until either the patient had had six such doses or pains had begun. If no pains eventuated the course of pituitary extract was repeated twenty-four hours later, and a second failure was followed by recourse to induction by bougies. The drug method was reasonably successful—no method of induction of labour being uniformly so—and had the advantage that it obviated anything in the nature of manual interference. In closing, Dr. Johnstone referred to the report of the Scottish Commission on puerperal morbidity; one of its recommendations was to the effect that the Insurance Act should be so altered that maternity benefit should be refused to women whose domestic circumstances were such as to make it desirable that they should not be confined at home, and who yet refused to go into hospital. If fever cases were compelled to go into hospital in the interests of the public, surely women in such circumstances should be forced to go into a maternity hospital for their confinements in the interests of the State.

Dr. F. Edge (Birmingham) thought that one reason for the absence of sepsis in some pre-maternity work was the absence of vaginal examinations. Hence arose the absolute necessity of great care when they made vaginal examinations. The great danger was carrying germs already in the vagina up to and upon the lower pole of membranes. Unless these ante-natal examinations were conducted in a properly equipped and arranged ante-natal clinic a great risk of increased sepsis might arise. All that was essential could be made out without passing the fingers into the cervical canal. These examinations were so prolonged that the general practitioner should be well paid for making them. As to vaginal discharges douching was of very little use. If the points infected were in the vulva they were carrying infection upwards. If in the cervix then more was required than a douche. Careful swabbing and a frequently changed antiseptic gauze pack was required.

Dr. Marion E. Mackenzie (Leeds) desired to emphasize the importance of diet in ante-natal work for making the child small, especially in the better-class mother whose diet was too liberal. Undoubtedly a difference of a few pounds could be made in the weight of the baby, and in cases where the patient had dieted in one pregnancy the baby had been much smaller than in a case where the mother was carefully fattened up. Another point she wished to make arose out of Major Moss's suggestion that every baby should be born in hospital, and that was the risk of enteritis to the baby, which might be the cause of dyspepsia for life. She also thought that the risk of breast failure was greater in hospital.

Dr. Janet M. Campbell (London) said that the chief contribution which the public health service could make to the reduction of maternal mortality was the provision of facilities for ante-natal supervision and the education of the mothers to make use of them. There was no intention of replacing the general practitioner or of coming between him and his patient, but many women were attended only by midwives, and many doctors had no time to exercise effective supervision. There were about 550 ante-natal clinics staffed as far as practicable by doctors who had specialized in midwifery and nurses who could visit the patients in their homes. The function of the centre was to examine and educate, and it should be in touch with a maternity hospital for complicated cases. In country districts use should be made of district nurse-midwives, and there should be an extended use of consultants. It was very desirable that all cases of ante-partum haemorrhage should be referred to hospital at once whenever practicable.

The President emphatically agreed that ante-natal work was very much an art. He was pleased to note that all the speakers had agreed that they had experienced no difficulty in persuading their patients to submit to examination, especially as at the meeting last year a good deal had been made of the alleged reluctance of women to submit to ante-natal examination. Though all of them were agreed on the main principles, it was very interesting to note the marked difference in the practice of the various speakers. There were, for instance, those who placed reliance on the use of callipers and those who did not. There were wonderful people who could palpate a placenta through the abdomen; he confessed that he could not do so himself. There was rather a striking difference in the forceps rate in the figures which had been quoted, as one would expect it was much higher in a scattered practice than in hospital. As regards contracted outlet, he himself had seen very very few, but no doubt a rare case would make a great impression on anyone who met with it. There was the question of what should be done in ante-partum haemorrhage. Often enough it was only slight and no harm was done. Certainly the type of the haemorrhage might assist a diagnosis, definite gushes of blood indicating a placenta praevia. But every now and then all their calculations were upset by what appeared to be a slight case suddenly developing a really severe and dangerous bleeding. He thought that they should keep their cases longer in hospital for observation, and if constant observation were difficult owing, for instance, to the distance of the patient from her doctor, then dilatation of the cervix and digital exploration for the placenta should be done. He did not take Dr. Marion Mackenzie's remarks on dieting at all seriously.

Opener's Reply.

Dr. Willett, in reply, said that the opener must make his paper rather provocative in order to evoke a discussion. His view in regard to the use of callipers was that they were very useful in confirming any suspicion that had been otherwise aroused that something was wrong in the size of the pelvis. He did not make a routine vaginal examination because he had heard patients complain that at some clinics they were constantly subjected to these examinations. He had never yet met with a case of contraction at the outlet, but an estimation could be made by seeing whether two, three, or four fingers could be fitted in transversely between the tubera ischii. It gave the patient a great feeling of confidence if she could be told, after a careful examination, that her labour ought to be quite straightforward, and if they could suggest that forceps would not be needed he thought that the patient would hold out a great deal longer. He thought that it was very seldom indeed that the placenta could be palpated through an undilated cervix. In his hands the quinine method of induction had failed in about 50 per cent. of cases. He agreed that great care should be exercised in staffing an ante-natal clinic. Residence in a hospital or post-graduate experience should be required in all cases.

SECTION OF PUBLIC MEDICINE AND INDUSTRIAL DISEASES.

Herbert Jones, L.R.C.S.I., D.P.H., President.

PUBLIC HEALTH AUTHORITIES AND THE CANCER PROBLEM.

BY

J. HALL-EDWARDS, L.R.C.P.Ed., D.R.M.E.Camb., F.R.S.Ed.; Major (late R.A.M.C.).

Despite the strenuous efforts now being made to elucidate the cause of cancer, we are making no headway in diminishing the appalling death rate from this terrible disease. Many theories have recently been brought forward as to its causation; the majority of them are resuscitations, and contain no new elements of importance. At the same time we have increasing evidence that at any rate a considerable percentage of the deaths are avoidable, and it is my wish in this short paper to consider the subject from this point of view.

In a circular published by the Ministry of Health (No. 426, August 14th, 1923) it is pointed out that by means of propaganda work, which can be carried out through the agency of our public health departments, a large amount of unnecessary suffering could be avoided, and many lives saved. The circular in question deprecates the establishment of a "public cancer service" "until medical education in cancer diagnosis and treatment has undergone further development."

With this contention I am not entirely in accord, for it must be evident that, in dealing with any known disease, we can only give advice within the scope of our knowledge; and if we are to wait for the fulfilment of our desires in respect to cancer thousands of lives will be unnecessarily sacrificed in the interim.

There can be no doubt that in scientifically tackling the problem the first rational step would be that of making the disease compulsorily notifiable, but the difficulties in the way of carrying this out effectively are great, not the least important being that experience has taught us that a knowledge of the existence of this disease is detrimental to the well-being of the sufferer, and that popular opinion, based largely upon ignorance, is opposed to the step. I have very little doubt that sooner or later this drastic course will have to be adopted, but for the present it is wise to content ourselves in safeguarding the public by means of education through channels now at our disposal. Through the instrumentality of the public health departments of our large cities and towns much can be done by the setting up of subcommittees whose duty it should be to instruct the nurses and welfare workers under their charge in what is at present known concerning the disease, and in the methods which should be adopted for combating it. The first duty of such a committee should be the drawing up of a report of the facilities offered by the city or town for the treatment of cancer, both operative and remedial. With this object in view the Cancer Subcommittee of the City of Birmingham addressed the following questions to the various hospitals within its boundaries:

1. Are the facilities which you have at your command adequate for dealing with cases of cancer now presenting themselves for treatment, and, if adequate, in what respect particularly as regards the following: (*a*) *x* rays; (*b*) radium; (*c*) diathermy; (*d*) other electrical methods; (*e*) immunizing serums, etc.?
2. Is there much delay between the recognition of the first symptoms of the disease by the patients and their seeking advice at your hospital?
3. Is there any delay (avoidable or unavoidable) between the diagnosis of cancer and the application of operative or other methods of treatment?
4. Would your committee be willing to furnish the Cancer Subcommittee with the names and addresses of all patients resident in the city who apply for treatment for cancer, together with the date of operation, the part affected, the nature of the growth, and the treatment adopted?
5. What facilities, if any, have you at your command for dealing with recurrent and inoperable cases?
6. Your opinion as to the necessity for providing residential treatment for inoperable cases with which you are unable to deal.

This circular elicited replies from nine hospitals. In answer to the first question nearly all the institutions replied that they regarded their equipment as sufficient, but in the cases of two of the large hospitals in the city both regretted that they had no apparatus for deep *x*-ray therapy, and one said that it desired a supply of radium. In only one hospital out of nine was there installed a deep *x*-ray therapy set.

Question No. 2 was answered by the statement that in a large percentage of cases patients did not seek advice at the earliest moment.

In answer to question No. 3 the subcommittee was informed that little or no delay occurred.

In reply to question No. 4, relating to the giving of information with regard to the patients treated, two hospitals only intimated their willingness to do this, whilst another hospital expressed its willingness, granting that the patients had no objection. Six out of the nine hospitals refused to furnish this information, for the reasons generally brought forward in opposition to compulsory notification.

To question No. 5, relating to recurrent and inoperable cases, the answers were much the same as to question No. 1.

To the last question seven of the replies were to the effect that residential treatment was urgently needed. In one hospital residential treatment was already established, whilst in another the view was expressed by the committee that residential treatment is no more necessary for cancer cases than for any other incurable disease.

In considering the replies the Cancer Subcommittee was unanimously of the opinion that further accommodation was required for inoperable cases, and although the subcommittee did not at the present feel that it was in a position to recommend this step it decided to take action at the earliest opportunity.

It is quite obvious from these replies that our hospitals are not either sufficiently or efficiently equipped for treating cancer by all the methods at present at our disposal which offer some chance of success. There can be no doubt that, if the authorities of these hospitals were asked the reason why they were not fully equipped, they would answer that the necessary money was not forthcoming. Whilst I still pin my faith in voluntary hospitals, I feel that the time has arrived when, in the circumstances, they should be given (without prejudice to their present position) the necessary apparatus for fighting cancer, at the expense of the State. The present appalling death rate from this disease calls for immediate action, and no stone should be left unturned which holds forth a chance of saving lives.

I would here like to say a few words on the suggestion made, that residential treatment is no more necessary in cases of cancer than in any other incurable disease. With this contention I am in absolute disagreement. Of all incurable diseases cancer holds a place especially its own, inasmuch as patients afflicted with the disease recognize that there is no hope and that their end is a matter of certainty. In many cases such patients suffer indescribable tortures, whilst their fearful sloughing, foul-smelling sores need constant attention, under conditions which could only be obtained in an institution properly equipped for such treatment. Writing on this question, Sir Bruce Bruce-Porter says: "One of the great tragedies of England to-day is the want of suitable 'homes' for incurable cancer patients."

The mental attitude engendered by this terrible disease demands that, for humanity's sake alone, steps should be taken to render their lives as livable as possible in the circumstances; and there can be no doubt that in carrying this into effect we should be doing at least as good, if not better, work than is being done in our sanatoriums, where hope of recovery always exists up to the moment of death.

It has been computed that from 10 to 15 per cent. of the deaths accruing from cancer could be saved by intensified propaganda work—that is to say, that from 7,000 to 10,000 lives could be saved annually. What would these lives mean to the nation? They are not the lives of newly born children whose destiny is unknown, but of fathers and mothers of families, whose responsibility is acknowledged to be an asset to the nation. Our inability to discover the cause of cancer should be no hindrance to such propaganda work, for with our present knowledge we are armed to a small extent with facilities for fighting the disease. We are told that smoking is a cause of cancer of the tongue. This is true to only a limited degree. Were it absolutely true half the male nation would be wiped out annually. Where there exists an already recognized lesion of the tongue or lips there can be no doubt that smoking, by keeping up irritation, engenders the disease, and a knowledge that under such conditions smoking should be avoided would undoubtedly save many lives. I merely mention smoking as one of the incidents of causation, but the same reasoning applies to many others which must be obvious to you all.

It is in recognizing the first symptoms of danger, and in the seeking of treatment at this stage, that lives are to be saved. Our nurses and welfare workers are in a position to instruct those with whom they come in contact as to the necessity of obtaining advice when symptoms present themselves which foreshadow danger. By the wholesale distribution of leaflets, giving advice as to the steps which should

be taken; by friendly advice to those who are hiding their sufferings, either from an exaggerated sense of modesty, or from fear that they may be informed that they are suffering from cancer; by the delivering of lectures on right living and hygienic surroundings; by the teaching of what is meant by bodily cleanliness, etc., lives can be saved.

Time will not permit of my discussing the many ways in which the problem may be faced; these must be obvious to those who have studied the question. I would, however, like to point out that in the carrying out of these suggestions it is not my intention to interfere in the slightest degree with the excellent work which is being done by the Cancer Research Committee. Indeed, I think it quite within the bounds of possibility that, were proper instructions issued to nurses and welfare workers, they might be found useful in obtaining knowledge on many vexed points which would be found to be of the greatest possible help to those engaged in research work.

In the brief discussion that followed Dr. Hall-Edwards's paper, Dr. WILLIAM MITCHELL (honorary radiologist, Bradford Royal Infirmary) referred to a number of possible causes of cancer which might be eliminated by education of the public, and at the same time offered promising fields for research; he cited as an example circumcision and its consequent cleanliness in relation to cancer of the cervix uteri. He believed that Jewesses suffered less in this respect than any other class of married women. He doubted if pipe smoking had much to do with cancer of the lip or tongue. At all events, watertight compartments in specialism should not be maintained. Preventive medicine was no new thing; it was at least as old as Moses.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ECHINOCOCCUS OF THE HEART.

ALONG with Dr. Donald Fraser I had the opportunity recently of examining a case in which death was due to echinococcus of the heart. A young healthy man, aged 24, a carter by occupation, was brought into hospital in a moribund condition. He had been attending to his horse in the yard and suddenly collapsed; when we saw him he was comatose and had marked dyspnoea. He died in a few minutes from respiratory failure.

I found *post mortem* a large infarction of the base of the right lung. On opening the right ventricle of the heart the cavity was found to be full of cysts varying in size from a small pea to a marble. On closer examination a cavity containing these cysts was found in the wall of the right ventricle just under the endocardium near the apex. The cavity was about the size of a hen's egg. Microscopical examination confirmed the diagnosis of echinococcus disease.

The wall of the cavity had ruptured, the cysts passed out into the right ventricle and were carried into the branches of the pulmonary arteries, where several cysts were found.

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AN OVERDOSE OF HYPNOTICS.

THE following account of the effects of an overdose of the proprietary hypnotic and sedative dial (ciba) and of paraldehyde may be of interest. A fellow practitioner was called at 8.45 a.m. on July 1st to a woman, aged 44, who was stated to have taken an overdose of dial tablets and of paraldehyde.

He found the patient unconscious, with pupils dilated three-quarters, no conjunctival reflex, and with slow shallow respirations, pulse 68 and slack, and slight cyanosis. All attempts to rouse her by mechanical stimulation failed. The stomach was washed out with warm water, and an enema of black coffee given after washing out the rectum.

The sister in charge of the home where the incident occurred stated that the patient had taken eleven dial tablets (each containing 1½ grains) and the contents of a bottle of paraldehyde mixture, but she did not know when they were taken. When found unconscious she must have swallowed 18 grains of dial and 5½ drachms of paraldehyde for she had been given one dial tablet and a dose of paraldehyde the previous evening.

I saw the patient at 11.30 the same morning. She was then profoundly unconscious, but was of normal colour and had the general appearance of a person in a peaceful sleep. Mechanical stimulation failed to rouse her. The pulse rate was 88 and respirations 24, both of normal rhythm and volume. The pupils were inactive, and dilated three-quarters; there was no conjunctival reflex. A pharyngeal reflex was elicited by rather strong stimulation. All the muscles were flaccid. The stomach was again washed out, with 10 pints of normal saline, which were returned almost clear. Half a pint of the saline was left in the stomach. The black coffee enema had not been retained, so I ordered half a pint of normal saline to be given by the rectum. Caffeine sodio-salicylate 1 grain was ordered to be given hypodermically every four hours.

I saw the patient again at 3.30 p.m.; she was still unconscious and could not be roused; pulse 86, respirations 22. A catheter drew off 12 ounces of urine. A continuous rectal saline was started and a pint retained. At 6 p.m., when she was seen again, there was no change. Another pint of saline was given by the rectum and retained.

At 7.30 p.m. on the same day she began to rouse. She made aimless movements, perhaps trying to get up. Her facial expression was quite blank, she did not appear to hear anything, nor to feel the painful stimuli applied to try and rouse her more thoroughly. She made purposeful movements to avoid a tickling on the soles of her feet. During this time she made no sound and showed no signs of recognition. Later she relapsed into unconsciousness again. At 8 p.m. she defaecated, and at 8.30 p.m. a catheter drew off 30 ounces of urine. At midnight a further 12 ounces of urine were drawn off, and another pint of saline given by the rectum.

At 1.15 a.m. on July 2nd she roused again and became very restless. At 2 a.m. she recognized the nurse in charge of her. At 3.15 a.m. she passed 30 ounces of urine, and drank a cup of black coffee. At 6.30 a.m she passed 15 ounces of urine. She was then quite herself again, and told the nurse that she had taken the drugs at about 7 a.m. on July 1st. She stated that she felt perfectly well, and had no nausea or headache or other pains. During the afternoon of July 2nd she ate well and looked well and at ease, as if nothing out of the ordinary had occurred, and her recovery was uneventful.

The copious administration of normal saline was designed to facilitate the kidney excretion.

Margate. R. W. NICHOL.

ACUTE OEDEMA OF THE CERVIX DURING THE PUERPERIUM.

THE condition observed in the case here described is so unusual in my experience, after twenty-five years of obstetric work in general practice, that I venture to record it.

I was asked by a colleague to see a lady, aged 34, a 4-para, in consultation, on November 16th, 1923. The child had been born at 3 a.m. No vaginal examination had been made during the labour and the membranes ruptured whilst the medical attendant was cleaning up. The child was born and the placenta expressed naturally in about one hour after his arrival. About 9 a.m., whilst performing her patient's toilet, the nurse noticed an unusual swelling in the vagina. The previous confinements had been normal, and there was no history of prolapse. The child weighed 7½ lb. I found a dark blue mass, about the size of an orange, dilating the orifice of the vulva; when it was touched the patient winced and complained of pain. Vaginal examination showed that the tumour was continuous with the anterior lip of the cervix; it had no pedicle. The uterus felt normal, was well contracted, and there was no history of haemorrhage. Except when touched, the tumour was giving no trouble, and the patient seemed very well otherwise. I suggested giving calcium lactate and leaving well alone.

The medical attendant informed me that the mass had disappeared in about twelve hours, and the nurse (a most intelligent woman, trained at the Rotunda) alleged that it could be almost seen to shrink. Two days later the anterior lip of the cervix was found a little thickened, and the cervix could be described as no more patulous than if the case had been normal.

I have only seen such a condition once before; it was in a woman on whom my chief (Professor Jardine) had allowed me to do craniotomy for hydrocephalus, in the Royal Maternity Hospital, Glasgow. In this case the tumour cleared up in a few hours, and I attributed it (wrongly no doubt) to operative interference.

The only fact which might have any bearing on the case now reported is that the patient had a severe attack of urticaria during her pregnancy. Any mechanical cause could be excluded in a labour so natural, and of short duration.

Speaking from memory, the only reference in English textbooks is in Munro Kerr's *Operative Midwifery*.

Whitworth, Rochdale. T. J. L. FORBES.

Reviews.

OLLA PODRIDA MEDICA.

It was an enthusiastic Scottish gourmand, it is said, who once described a sheep's head as a "grand piece o' confused feedin'." And at first sight one might be inclined to apply the definition to Sir John Bland-Sutton's *Orations and Addresses*,[1] embracing as it does such apparently diverse subjects as a harlequin foetus and Iapyx attempting to remove the head of the dart from the wounded Aeneas; the microscopic appearance of a psammoma and the head of a Jivaro Indian with a spigot of wood in the lobe of his ear; or the conjugal ligament of a seal and two famous sons of Aesculapius—to wit, Machaon and Podalirius. And yet, after all, though a grand piece of intellectual pabulum, there is no confusion: for here we have a scholarly mind finding recreation in the borderland of his own subject, and with the power—not, alas! common to all scientists—of passing knowledge on in true literary garb to a circle of readers who will be both blind and deaf if they cannot appreciate it. Many—if not most—of the articles have already appeared in the British Medical Journal, but readers will be glad to have them in this handy, well printed, and beautifully illustrated book. The first chapter consists of the Hunterian Oration for 1923, full of the discriminating hero-worship of one who, without undue flattery—or without any flattery at all—may be said to display throughout this volume the true Hunterian attitude of mind. *Homo sum: humani nihil a me alienum puto* is not enough: beast, bird, fish, and every creeping thing must of necessity enter also into the picture. It is not how Adam impressed the inhabitants of the Garden of Eden, but how the inhabitants of the Garden of Eden impressed Adam. "If a foal camell was put into a tub of spirits and sent I should be very glad," writes Hunter to a correspondent in 1723. And again, "Is it possible to get a young tame lion, or indeed any other beast or Bird. If camelions were sent it should be in the spring, as then we could feed them with flys through the summer; are there any cuckows with you?" Thus Hunter. And thus Bland-Sutton: "A disarmed skunk makes a good pet, and may be carried about like a kitten; it eats dead fowls, mice, fruit, vegetables, grubs, and beetles. Skunk fur is admired by women, and the fur can be improved by cross-breeding." Or this: "Shrunk heads, ear plugs, and labrets appeal to me. My father taught me to stuff birds at the time my mother stuffed me with the Creed and the Ten Commandments. Later in life I saw savages ornamented with feathers, skins, teeth, and claws in tropical forests; similar decorations are worn by fashionable human beings who strut in Piccadilly or parade the paddock at Ascot." Our author may say, and that truly, "Je prends mon bien où je le trouve." Long may he be spared to wield his facile and charming pen!

[1] *Orations and Addresses.* By Sir John Bland-Sutton. London: W. Heinemann (Medical Books), Ltd. 1924. (Fcap. 4to, pp. xii + 161: 51 figures. 10s. 6d. net.)

PHRENOLOGY: OLD AND NEW.

The Henderson Trust Fund was established by William Ramsay Henderson, jun., on May 27th, 1829, for the advancement and the diffusion of the science of phrenology; and it was an obligation on the trustees that they should publish in a cheap form an "*Essay on the Constitution of Man considered in relation to External Objects*, by George Combe" of Edinburgh, who was a pupil of Spurzheim, who was a disciple of Gall, who founded phrenology. Gall was a physician, Spurzheim had been a medical student, Combe appears to have been a lawyer.

In 1905 the Henderson trustees "resolved to devote a portion of the funds to the collection of facts likely to be useful in the study of anthropology, having reference especially to the cranial conformation of man and to the size and configuration of the brain and larger nervous centres . . . and to publish the records." From this resolution arose the Henderson Lectureship, and three lectures have now been published by the trustees in as many pamphlets.[2] Professor Elliot Smith, who gave the first lecture on January 26th, 1923, as noted in our columns on February 3rd (p. 199), expressed the opinion that the time had arrived for a juster appreciation of the important part played by Gall in bringing to an end a barren system of philosophy which seriously impeded progress; he devoted his lecture to an account of Gall's work, and discussed the views of Dr. Henry Head in his Hughlings Jackson Lecture at the Royal Society of Medicine on October 7th, 1920. Gall first suggested that the apparently uniform mass of the brain "was made up of organs which subserved the manifestations of the vital and moral faculties of man." In presenting their case to the French Institute in March, 1808, Gall and Spurzheim said that anatomists had paid too little attention to the cerebral convolutions and had assigned too much significance to the ventricles of the brain, each of which was supposed to be the dwelling place of one or more aspects of the psyche. The white substance was regarded as nothing more than a mass of vessels for excreting substances secreted by the grey cortex. The French Institute appointed a commission, which failed to understand the importance attached by Gall and Spurzheim to the grey substance of the brain. Professor Elliot Smith pointed out that Gall called attention to the cervical and lumbar enlargements of the spinal cord; demonstrated the reality of the decussation of the pyramids; noted the connexions of the optic tract with the quadrigeminal and geniculate bodies; and traced the fibres of the white substance to the pyramid decussation. He showed also that medullation begins first in the middle and posterior parts of the hemisphere, thus anticipating results obtained three-quarters of a century later by Flechsig. Gall's chief object in studying the brain was to work up a system of psychology which might enable him to associate different forms of head with certain moral or intellectual aptitudes. In pursuing this object he observed that a localized injury to the left hemisphere at the posterior end of the roof of the orbit interfered with the power of speech, and thus anticipated Broca's work by more than sixty years. Gall's teaching has been summarized by Bianchi in three propositions:

1. The cerebral convolutions, and especially the grey substance, are the organs of the intellectual faculty, and should be recognized as the parts where the instincts, sentiments, tendencies, talents, affective qualities, and, in general, the moral and intellectual forces are exercised.
2. There exist particular forms of intelligence, memory, imagination, and tendencies; and each cerebral organ has its own particular intelligence, memory, imagination, etc.
3. The qualities common to man and to animals have their seats in the lateral and posterior parts of the head.

In the second Henderson Lecture, delivered on February 29th, 1924, Sir James Crichton-Browne recorded his early interest in phrenology, derived from his father, medical superintendent of the Crichton Institution for the Insane, Dumfries, who had been for a time assistant to George Combe at his lectures, and afterwards for some years one of the Henderson trustees. Sir James Crichton-Browne considers that the phrenologists, notwithstanding their egregious errors, battled for a principle, now unimpeachable—that the brain is the organ of the mind. The principle, he said, was as old as Pythagoras; but in the early days of phrenology was not accepted by persons of such eminence as Lord Jeffrey and Lord Brougham. "Gall's method," the lecturer said, "was strictly inductive, but it was rashly employed, and he arrived at momentous conclusions on wholly insufficient data. . . . Phrenology in the old sense has faded away. . . . Yet, strange to say, we are all phrenologists to-day, phrenologists of the new school." The lecturer then propounded the thesis that the skull adapts itself to the configuration of the brain; and that as the brain is the organ of the mind, and as the skull reveals the contour of the brain, the shape of the

[2] The Henderson Trust Lectures. I, *The Old and the New Phrenology.* By Professor G. Elliot Smith, M.A., M.D., D.Sc., F.R.S. II, *The Story of the Brain.* By Sir James Crichton-Browne, M.D., LL.D., F.R.S. III, *Phrenological Studies of the Skull and Brain Cast of Sir Thomas Browne of Norwich.* By Sir Arthur Keith, M.D., F.R.S. London and Edinburgh: Oliver and Boyd. 1924. (Cr. 4to; illustrated. Price 6d. each lecture.)

skull must have some relation to mental manifestations. In the course of his argument, Sir James Crichton-Browne admitted that, while the size and mass of the brain are, in general, a measure of mental power, nevertheless the volume of the brain is not the sole criterion of mental capacity. A brain of small dimensions may contain more active brain stuff than one of large size; and it is the grey substance which really matters. The phrenologists, the lecturer maintained, were right in the principle of localization of function in the brain, "though not in the sense they alleged, nor according to the scheme they issued." He repeated the story that Gall as a schoolboy noticed that pupils with quick, retentive memories had a certain fullness of the eyes, and for this reason, when developing his system of phrenology, planted his faculty of language in the neighbourhood of Broca's convolution. This fact, that phrenologists located the higher intellectual faculties in the frontal lobes, is given as another instance of their prescience.

In the third lecture, delivered on May 9th, 1924, Sir ARTHUR KEITH displayed somewhat less anxiety than his predecessors to magnify the researches of the earlier phrenologists, though he, too, confessed that in his youth he had been seized by the doctrine promulgated by George Combe and his younger brother Andrew. Experience gained in his student days sadly disturbed his phrenological beliefs, but Sir Arthur Keith is sustained by an inward assurance that some day Gall's dream of a science of phrenology will come true, and that it will be possible, by a mere inspection of a brain, to assess the mental potentialities of its owner. The lecturer illustrated the methods he has adopted in the attempt to place the study of the human skull on a more rational basis by means of a comparison of the skull of Sir Thomas Browne with those of Dean Swift, Robert the Bruce, and Robert Burns. He explained his reasons for the adoption of the subcerebral plane instead of the Frankfort plane in his standard frame; and he indicated the error of the older phrenologists in attaching significance to the conformation of the forehead by referring to the changes produced by acromegaly. Sir Arthur Keith acknowledged that his researches had not brought us any nearer to an explanation of the peculiar abilities of the author of *Religio Medici*, so that it might appear that phrenology is merely a doctrine, not a science. But he did not take this view; rather he seemed to think that the day might possibly come when we shall be able to decipher the parts of the brain in the living head, and ascribe with certainty the functional significance to be attached to each of them—a final tribute to phrenology.

For the greater part of a century Gall has been under a cloud as a charlatan who invented phrenology, a pseudo-science associated with mean little temples and pier kiosks, where china busts with mapped-out crania were venerated. Thither the proletariat resorted to have their bumps of amativeness or combativeness defined. The rehabilitation of Gall's reputation by such distinguished persons as Professor Elliot Smith, Dr. Henry Head, Sir Arthur Keith, and Sir James Crichton-Browne is interesting. The rehabilitation does not apply to Spurzheim, it appears; though opinion differs on this point. Dr. James Drever, in 1917, wrote: "Gall was certainly more than half a charlatan, as were many of his followers, and cranioscopy can claim no respect from the scientist. But Spurzheim and Combe were not charlatans." Professor Elliot Smith replies that Dr. Drever could not have been aware of the facts, since he ignored the real contribution of Gall to neurological science. Perhaps the truth about Gall is best indicated by a remark Professor Elliot Smith makes to the effect that Gall, who, in his opinion, was a superb anatomist and demonstrator, a man of intense devotion to research, was one of those who are content to rely wholly on observation and do not attempt to check any of their observations by experiment. On hasty inferences from his observations Gall based his air castle of phrenology, which his less capable disciples—Spurzheim and Combe—could not prevent from crumbling. The survival of its ruins was probably due solely to the munificence of William Ramsay Henderson, whose gifts are now being applied to more fruitful purpose.

THE DISEASES OF MIDDLE LIFE.

THE two volumes, each containing more than 900 pages, entitled *Diseases of Middle Life*,[3] contain twenty-three articles by various contributors, and are edited by Dr. FRANK A. CRAIG of the Henry Phipps Institute of the University of Pennsylvania. At first sight, it must occur to the reader that, except for the omission of children's diseases, of the acute fevers, and of special articles on tuberculosis and syphilis, this work covers much the same ground as ordinary textbooks of medicine. The editor evidently anticipated such a criticism, for he observes in the preface that the diseases are approached from a different angle and presented in a form unlike that usually employed. The object of the work is to facilitate the recognition of the diseases in an early stage, when they are curable or preventable; in fact, in the belief that the proper time to treat old age is during middle life. No definite limits are assigned to the age period designated "middle life," the term being employed in an elastic way to be interpreted by each contributor as he thinks fit. In his chapter on gynaecology, Dr. F. A. L. Lockhart takes diseases of women between 35 and 45; but Dr. J. E. Talley, in his article on cardiac disease, which occupies more than 200 pages, certainly does not confine himself to what is ordinarily considered to be middle age. Dr. J. R. Lutz rather goes out of his way in writing of jaundice to state that "the hereditary type affects principally the newborn and disappears after a few days or weeks in those cases that recover," for by hereditary jaundice is usually understood not syphilitic but haemolytic jaundice, which, when congenital, is usually lifelong. Though Asiatic cholera, gastro-intestinal influenza, rabies, and varicocele, to take examples at hazard, may, of course, occur in middle age, they are hardly diseases specially characteristic of that period, and throughout the work there appears, possibly from anxiety to avoid omissions, to be a tendency to include too much. There is room for a book on middle age in which the text deals with that subject and the morbid conditions specially likely to occur in that period, but the editor of the present work has been too good natured to his contributors, and the result is much what the reader's first impression foreshadowed.

RURAL EXCRETA DISPOSAL.

IT is generally recognized by all who have had occasion to give attention to the matter that the sanitary problems in rural districts differ very materially from those in urban areas, for the reason that in the latter they can be dealt with on a communal basis, while in most country places single dwellings or small groups of dwellings are concerned. In *Home Sewage Disposal*[4] Mr. W. A. HARDENBERGH, the director of rural sanitation of the Jefferson (Alabama) County Board of Health, has set himself the task of furnishing reliable data to engineers and others engaged or interested in sewage disposal for single homes, small communities, and institutions.

He states at the outset that "any method of sewage treatment or excreta disposal, if it is to be effective in the reduction or elimination of disease, must prevent the access of flies and of animals to the excreta; the scattering of the excreta or sewage over the surface of the ground, causing soil pollution; and ground water pollution, or the contamination of wells, springs, and other sources of drinking water." Most public health workers in this country consider that these desiderata can be attained by the speedy application of earth to excreta on the lines taught by Moses and popularized in more recent years in England by the Rev. Mr. Moule of Dorchester and Dr. Vivian Poore at Andover. The principle underlying this method is the rapid nitrification of excreta by the activities of bacteria, and it is a little astonishing to find that it is not referred to by Mr. Hardenbergh. He gives very elaborate descriptions of concrete-constructed vault privies

[3] *Diseases of Middle Life: The Prevention, Recognition, and Treatment of the Morbid Processes of Special Significance in this Critical Life Period.* Edited by Frank A. Craig, M.D. In two volumes. Philadelphia: F. A. Davis and Co. 1923. (Med 8vo; Vol. I, pp. xi + 351; Vol. II, pp. viii + 351; illustrated. 15 dollars net.)

[4] *Home Sewage Disposal.* By W. A. Hardenbergh, Major, Sanitary Corps O.R.C., etc. London: J. B. Lippincott Company. 1924. (Demy 8vo, pp. vii + 274; 82 figures. 15s. net.)

and of privies erected over septic tanks or made to discharge into tanks situated at a distance from the privy, and he describes the "box and can privy," which is apparently the pail closet as we know it in this country. He also refers, though not very approvingly, to the "chemical closet," which is in effect a closet-pan fitted into a container or connected with a large tank holding either caustic soda or a phenol or pine tar disinfectant according to the whim of the manufacturer. The nearest approach to this type of closet in this country is the Goux system, in which the inside of a pail is packed at the bottom and sides with cotton waste, as carried out in Halifax. More nearly akin to it is the method first adopted in Congleton, Cheshire, of placing in the bottom of a pail a supply of peat impregnated with strong sulphuric acid, by which it is claimed that the ammonium carbonate is converted into the more stable sulphate.

Although we cannot approve of the recommendations of the author regarding single dwellings, we have nothing but praise for the manner in which he deals with the treatment of sewage from groups of houses or from isolated institutions. His elaborate and detailed description of the construction of tanks and of the best methods of dealing with the effluents from them leaves little to be desired, and if due allowance is made for local conditions his recommendations may be followed with safety. The illustrations in this part of the volume are numerous, and serve to elucidate the text to a degree which should render the second portion of the volume invaluable to public health workers in this country as well as to those in America.

NOTES ON BOOKS.

PROFESSOR A. BIEDL'S work on internal secretion, of which an English translation was published shortly before the war (see JOURNAL, May 24th, 1913, p. 1116), has reached its fourth edition,[5] although only the first part of the first volume and the third volume have at present been issued. The former is divided into a general and a special part. In the general part the historical development, physiological foundation, and general principles of the doctrine of internal secretion are considered; while the second part, which is concerned with the thyroid, parathyroids, and thymus, contains a detailed description of the development of these organs, their anatomy, histology, and physiology, and an account of the clinical symptoms and treatment of disease of the parathyroids in man and of the relation of the parathyroids to other endocrine organs. The third volume, consisting of 480 pages, is entirely devoted to a bibliography of internal secretion down to the middle of 1921. In spite of its size the list of works quoted does not lay any claim to be exhaustive, as, in the first place, the foreign literature of the last five years was not completely available, and secondly, all the earlier literature down to the middle of the nineteenth century was omitted, the reader being referred to special monographs on the various endocrine organs for information. In spite of the incomplete character of the references, the volume and page being often omitted, the absence of uniformity of bibliographical style, and the presence of errors in some of the British references which we have tested, the amount of labour required for the compilation of such an index cannot but provoke respect for the author's industry.

Mr. KINGZETT'S *Chemical Encyclopaedia*[6] is the third and enlarged edition of his *Popular Chemical Dictionary*, of which the second edition appeared two years ago. This new edition is considerably larger than the earlier ones, and the attention paid to cross-indexing has much increased its value. The descriptions of the various chemical substances are clearly and simply set out.

We have received a copy of the first volume of a new journal devoted to psycho-analysis entitled *Fortschritte der Sexualwissenschaft und Psychanalyse*,[7] and edited by Dr. WILHELM STEKEL of Vienna, with the assistance of Dr. ANTON MISSRIEGLER and Dr. FRITZ WITTELS. In contradistinction from the publications of the orthodox Freudian school, in which, according to Dr. Stekel, the patient has become a secondary consideration, the new publication is, with few exceptions, devoted to clinical studies. Most of the papers deal with epilepsy and allied conditions, and the results are held to indicate that by the proper use of psychoanalysis success may be obtained in the treatment of diseases which were formerly regarded as incurable and exclusively organic.

The Tenth Bulletin of the International Association of Medical Museums[8] contains many articles dealing with technical methods which will be of use both in the museum and in the laboratory. The intention is to render the bulletin, not a manual of technique, but a medium for drawing attention to the most recent additions to knowledge and reporting on their value and trustworthiness. In addition to original articles having this end in view, a section is included giving abstracts of the current literature on technical subjects. Of the original articles may be mentioned one on a rapid method of macerating bone specimens, which every curator will be glad to know of. It is based on the solvent action of antiformin on soft tissues, and in illustration of the rapidity of the method it is stated that good macerated specimens can be obtained in half an hour after removing the bone from the body. Professor Crowell speaks highly of Jores's method of preparing coloured specimens, as modified by Kloz and MacLachlan. The method is much less expensive than that of Kaiserling, and Crowell has adopted it almost to the exclusion of other methods. Failures are attributed to departures from the published formulae, but it is stated that the specimen should not be more than 3 cm. thick, a circumstance which somewhat limits the usefulness of the method. Dr. Watters reports on the ultimate result of the gelatin method of mounting specimens, after an experience of eighteen years; and a very practical article on the colouring of photographs of pathological specimens is contributed by Drs. Callender, Coupal, and Prior. The volume also contains several articles on microscopical technique. A brief account of the work of the late James Ritchie, who was an active member of the International Association of Medical Museums from the time of its inception, is contributed by James Miller.

[5] *Innere Sekretion. Ihre physiologischen grundlagen und ihre Bedeutung für die Pathologie.* Von Prof Dr. A. Biedl. Band I, Teil I; Band III, Literatur. Vierte Auflage. Berlin and Vienna: Urban und Schwarzenberg. 1922. (Band I, sup. roy. 8vo, pp. 338; 44 figures; Band III, pp. 480.)

[6] *Chemical Encyclopaedia.* By C. T. Kingzett, F.I.C., F.C.S. Third edition. London: Baillière, Tindall and Cox. 1924. (Med. 8vo, pp. viii+606. 30s. net.)

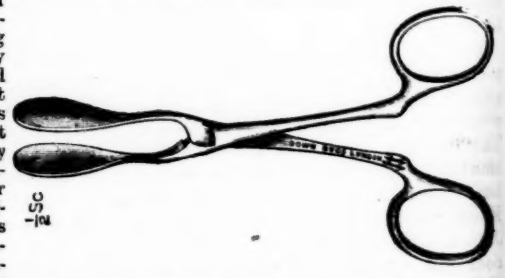
[7] *Fortschritte der Sexualwissenschaft und Psychanalyse.* Herausgegeben von Dr. Wilhelm Stekel. Redigiert von Dr. Anton Missriegler, und Dr. Fritz Wittels. Band I. Liepzig and Vienna: Franz Deuticke. 1924. (Med. 8vo, pp. 420.)

[8] *Bulletin No. X of the International Association of Medical Museums and Journal of Technical Methods.* Managing Editors: Maude E. Abbott, M.D., and Major James F. Coupal. New York: P. B. Hoeber, Inc. 1924. (Med. 8vo, pp. viii + 165; illustrated. 3 dollars.)

MEDICAL AND SURGICAL APPLIANCES.

Swab Forceps.

MR. R. L. SPITTEL, F.R.C.S. (General Hospital, Colombo), writes: Messrs. Down Bros. have made for me two patterns of forceps in rustless steel, one a spring swab forceps and the other bow-handled (illustrated here). Designed primarily to replace the fingers when dressing wounds, they obviate the use of gloves and the danger of contaminating lotions by repeated immersions of the bare hand. Used with an ordinary dressing forceps they pick up and squeeze out moist pledgets effectively. At operations they serve to manipulate mops or to pick up vulnerable tissues such as intestine or appendix; for the latter purpose the gripping surface should be provided with wide grooves. Ratchets on the bow-handled forceps enable the swab to be retained, so that it may be laid aside and picked up again later. The essential element in the spring forceps is the lightness of these springs, which should respond to the least touch and not tire the fingers.



A Syringe for Regional Anaesthesia, including Splanchnic Analgesia.

MR. O. STANLEY HILLMAN, F.R.C.S. (London, W.), writes: The syringe has been designed for regional anaesthetic work, including splanchnic analgesia, for which a specially long needle is required. The syringe is of the Record type and is capable of holding 12 c.cm., but is graduated to 10 c.cm. only, the remaining 2 c.cm. being available for aspiration after the syringe has been filled to the 10 c.cm. mark, and has been attached to the needle already in position in the patient. It is made with a peripheral nozzle, which greatly facilitates its use in some positions. The nozzle is made with a pin, which holds the bayonet fitting with which each needle is made, thus preventing any "flying off" of the needle when injecting. The needles are made of rustless steel and are of the sizes recommended in Labat's book on regional anaesthesia. The syringe has been made for me by Messrs. Arnold and Sons (John Bell and Croyden, Ltd.), 50-52, Wigmore Street, W.1, and they supply it in a box containing three of each size of needle.

SMALL-POX AND VACCINATION IN THE PHILIPPINES.

BY

JOHN C. McVAIL, M.D., LL.D., F.R.F.P.S.

THE report for the year 1922 by Dr. Vicente de Jesús, Director of the Philippine Health Service, shows a decided improvement in the manner of preparation and in accuracy as compared with some previous volumes. It has a useful table of contents, and the index, appreciably shorter, is much better arranged. The activities of the Health Service during the year are summed up in the following introductory passage:

"Substantial decreases in the general mortality and in infant mortality rates constituted the salient points of the year. The work on leprosy investigation was expanded by more liberal appropriation and by the detailing of expert technical personnel at Culion and at San Lazaro Hospital; the vaccination campaigns for the eradication of small-pox, cholera, and typhoid were continued and conducted in an intensive and systematic manner; and with the co-operation of the Rockefeller Foundation, malaria and hookworm surveys were effected, resulting in a decided practical contribution to public health conservation. Special investigations were also conducted in different provinces with a view to eradicate yaws and tropical ulcers. The greatest achievements of the year, however, were attained in the suppression of epidemics and in keeping up and raising the moral of health officials, resulting in greater individual activity and efficiency, and a higher conception and better comprehension of their duties and responsibilities.

"Compared with the figures for 1921, notable reductions in the general mortality and infant mortality rates have been accomplished in 1922—namely, from 21.22 to 18.94 per 1,000 population in the case of general mortality, and from 170.46 to 154.94 per 1,000 births in the case of infant mortality. The reductions in this regard have resulted, undoubtedly, from: (*a*) suppression of epidemics; (*b*) slow but gradual control of preventable disease through effective health measures and permanent sanitary improvements; and (*c*) improvement of individual health through health education and publicity, and the subsequent awakening of the sanitary conscience of the people at large."

The special interest of the Philippines reports for several years past has related to the facts as to small-pox and vaccination in the islands. These were discussed by me pretty fully in the BRITISH MEDICAL JOURNAL last year (1923, vol. i, p. 158, and vol. ii, p. 421). Happily variola has been much less prevalent since the great epidemic of 1918-19. The following have been the recorded deaths in the six years 1917-22 inclusive:

	Manila (Capital City).	Provinces (including Mindanao-Sulu).
1917	2	434
1918	989	15,158
1919	55	49,196
1920	5	7,100
1921	0	719
1922	0	19

The health authorities attribute the disappearance of the disease in Manila to "the continuous vaccination and revaccination campaign against small-pox . . . from 1918 to the present date," and in the provinces to "continued and extensive vaccinations, especially of the newly born infants." It may be recalled, however, that in the years previous to the epidemic there had been an enormous amount of alleged vaccination and revaccination, but that inquiry raised serious doubt as to the value of much of the vaccine used, whether owing to original inactivity or to loss of efficacy as a result of defects in preservation and transport in a warm climate. The natives had proved incompetent and unreliable, and many parents had deliberately wiped off the lymph immediately after insertion. Further, it had not been found practicable to inspect anything like the whole of the vaccinations performed; and, finally, a huge percentage of those inspected were found to have given no local result. Many of these failures, however, were probably due to immunity owing to previous successful vaccination or revaccination. It may be freely admitted that these defects were largely unavoidable, but their general effect has been to leave serious doubt as to the actual amount of reliable vaccination and revaccination in the Philippines. In these circumstances the health authorities, though naturally rejoicing now in the disappearance of small-pox, should be warned by their previous experience. They know—none better—that small-pox is an epidemic disease. Even in parts of the world where it may be regarded as endemic, there are great fluctuations in prevalence. In Europe and America, in centuries when there was neither vaccination nor small-pox inoculation, there were everywhere intervals of practical freedom from the pestilence. Epidemics came in some places about every four years, and in others less frequently. Are Dr. de Jesús and his colleagues quite sure that even now their vaccine material is always and everywhere reliable; that it is never rendered inert by the heat of the climate combined with defective storage and transit; that their vaccinating parties, admirably conceived and arranged, are even yet wholly composed of skilled and trustworthy men; and that if an epidemic again occurs they will not again find out that their system has been defective?

The demonstration of the power of vaccinia over variola requires no buttressing by data which cannot be tested and proved in every detail. Since the days of Jenner history throughout the world has accumulated evidence of the value of his prophylaxis, and serious disservice is done to the cause of preventive medicine by claims which may be too hurriedly made or cannot stand the minutest scrutiny. In 1922 in the capital city of Manila, with its population of close on 300,000, there were 111,649 vaccinations and revaccinations, but only 21,919 were inspected as to the result, and in 5,652 it was negative. How many of the total were primary and how many were revaccinations does not appear, but the fact is that only 16,267 of the whole 111,649 are recorded as positive. In the great southern archipelago of Mindanao and Sulu, where it might be reasonably supposed that administration is more difficult than in the capital of the Philippines, the proportion of inspections is much higher, and yet the figures are accompanied by a modest explanation of why they are so low.

There was "the difficulty of performing the inspection, because of the nomadic way of living of the Mohammedan natives and the difficulty of communication."

As to the material used, "dry vaccine has been preferred in remote places and where transportation facilities were difficult or irregular; and the fresh vaccine only in places where ice was available for its preservation."

Also "the low percentage of 'takes' may be attributed to the occasionally defective classifications made by the sanitary inspectors in determining or distinguishing positive vaccinations from slight reactions. Besides this, some of the persons vaccinated had already previous successful vaccinations."

All these considerations are relevant, and indicate a grasp of essential facts. Of 108,449 vaccinations in Mindanao and Sulu, 72,590 were inspected, and 39,134 were reported positive. In the Provinces, of 1,900,704 vaccinations, 1,384,910 were inspected, and of these 846,532 were positive, 538,378 being negative.

Unquestionably the health department of the Filipino Government is striving after better things. But its difficulties are immense, and no good will be done by too ready assumptions as to cause and effect in the domain of disease prevention. It is certain, however, that good vaccine, skilfully used and not destroyed on the skin of the vaccinee, will protect against variola those who resort to it and who renew their protection as may be required.

As regards fatality rates of small-pox in 1922, the figures are (fortunately) insufficient to be of much statistical value. In Manila there were no cases, in the Provinces 12 deaths occurred in 126 cases of small-pox, and in Mindanao and Sulu 7 deaths in 14 cases. In addition there were in the Provinces 183 cases of "varioloid" with 4 deaths. If these be added to the small-pox figures the fatality rate is, of course, lowered. It is regrettable that neither in this nor in previous reports is any statement made as to the differential diagnosis between variola and varioloid, as the terms are used in the Philippines. It would be worth knowing whether merely mild cases are put in the latter category and more severe cases in the former, or whether there are two recognizably different types of the disease. The latter view is rather supported by the fact that in nearly all the provinces where "varioloid" occurred there was no "small-pox." Bohol had 61 varioloids, and Cavite 63, without a single death or a single registration of small-pox. The province of Oriental Negros, however, had 115 small-pox cases with 10 deaths, and 6 varioloids with one death, while Samar had no death in 6 small-pox cases and 7 varioloids.

Very remarkably, Sorsogon had no small-pox cases, but 3 of varioloid, all of which were fatal. Perhaps in his next annual report, or even earlier, which would be better, the Director of Health will deal with this question, bearing as it does on the whole subject of mild small-pox, which is of so much interest to epidemiologists at the present time.

PORT AND SHIPPING SANITATION IN THE FAR EAST.

In August, 1922, the Health Committee of the League of Nations decided to dispatch a mission to the Far East. The main object was to gain the information necessary for framing a convention governing port health procedure which would receive the approbation and adherence of all Far Eastern countries. The mission was entrusted to Dr. F. Norman White, who, after making a tour of 35,000 miles extending over nine months, during which a vast amount of information was accumulated, presented a voluminous report, a copy of which has just reached us. The principal places visited were Bangkok, Singapore, Java, Hong-Kong, Shanghai, Japan, Formosa, Korea, Harbin, Mukden, Darien, Newchwang, Peking, Manila, Haiphong, Saigon, Kuala Lumpur, Penang, Rangoon, Calcutta, Simla, Bombay, and Colombo. Nominally the subject-matter of the inquiry was already covered by the International Sanitary Convention of Paris, but this convention was framed primarily with the object of protecting the countries of the West from invasion by infection from the East, and the local conditions peculiar to the East received insufficient attention. For instance, the Paris Convention endows the human being with an importance as a vehicle for the transmission of plague infection from port to port that he does not possess in the East, and most vessels which have in the past done so much harm in spreading plague infection from country to country might still be designated "healthy" in the terms of the Paris Convention. The convention is regarded with unqualified disapproval in the East, and it is considered that mere revision would be insufficient to convert it into a satisfactory document. Dr. Norman White, however, thinks that with certain additions it could be adapted to the conditions prevailing in the Far East, and he has drafted a series of articles which, he suggests, might be incorporated in the Paris Convention.

The articles, twenty-three in number, are concerned partly with definitions necessary to the understanding of the effective provisions. The diseases regarded as within the scope of the provisions are typhus, bubonic or rat plague, pneumonic plague, cholera, small-pox, and yellow fever, the incubation periods of which are reckoned at six days for plague, cholera, and yellow fever, fourteen days for small-pox, and twelve days for typhus. The existence of a "plague epizoötic" is to be regarded as established by the discovery of a plague-infected rat in the local rat population, or the occurrence of a non-imported case of bubonic plague. Ports are classified in three categories: "first-class ports," having (1) an adequate health staff, (2) apparatus for fumigation of large vessels, (3) a staff for rat scrutiny, (4) a quarantine station for detention and disinfection of deck passengers, (5) a bacteriological laboratory, (6) an infectious diseases hospital, (7) a good water supply, and (8) machinery for dealing with vital statistics; "second-class ports," in which conditions (1), (3), (5), (6), (7), and (8) are fulfilled; "third-class ports," those not falling within the above. A "suspected port" is one in which a non-imported case of disease has occurred or a plague epizoötic is present. A first- or second-class port is to be deemed an "infected port" when twenty-five cases of disease have occurred during any one week, or, in the case of plague, when rat infection has been proved in any harbour area; the occurrence of five deaths from disease other than yellow fever within one week shall be sufficient to constitute a third-class port an "infected port." One case of yellow fever shall suffice to constitute a port of any class infected. A port shall cease to be considered suspected when no case has been reported during two weeks; also, in the case of plague, when no infected rats have been found during two months. A port shall cease to be considered infected (and shall pass into the "suspected" category) when for three weeks the number of cases has fallen to fifteen a week in the case of first- and second-class ports, or to three deaths a week in the case of third-class ports; provided that no first- or second-class port shall cease to be deemed infected until one month from the discovery of the last plague-infected rat in the harbour area. In the case of yellow fever, a port shall be considered healthy when no case has occurred for two months.

The effective provisions of the draft are:

1. The signatory Government shall undertake a systematic examination of rats in the harbour area during a period of six months after a port of the first or second class has ceased to be suspected.
2. In the event of plague occurring in the interior of the country, outside the port area, the Government shall disinfest all goods likely to harbour rats, before shipment.
3. Passengers, other than cabin passengers, coming from a territory in which cholera, typhus, or small-pox prevails, shall be dealt with at the port of departure in accordance with the requirements of the Government of the port of destination.
4. Notification by the signatory Government of the first case of disease recognized in its ports shall be made immediately by telegram to a central intelligence bureau, giving details of the case and the preventive measures taken; and in the case of first-class ports, a weekly notification of fresh cases shall be made, until the disease is no longer epidemic or sporadic; second- and third-class ports are to make fortnightly notification.
5. The signatory Governments shall take cognizance of any ship during her voyage from suspected or infected ports, and of vessels from clean ports which have cases of disease or "plague-suspicious" or "cholera-suspicious" cargo on board (the nature of the goods likely to convey rats or the cholera-virus is specified).
6. The measures to be taken against ships of which the signatory Governments take cognizance shall be left to the discretion of the authorities at the port of arrival. These measures will include such matters as inspection, quarantine, and disinfestation, and will vary according to the health condition of the port of departure and of the passengers and cargo; and, more particularly, (*a*) in the case of ships from clean ports carrying plague-suspicious cargo, measures for rat destruction shall be applied at the anchorage before discharge of cargo is permitted or pratique given; (*b*) any ship, of whatever origin, arriving at any port of the first class, which has not been fumigated within the preceding six months, shall be fumigated before her departure, and in the case of vessels whose trade is confined to the Eastern arena, three-monthly fumigation shall be imperative; (*c*) any ship arriving at a first-class port shall have her drinking-water tanks cleaned and sterilized, unless this has been done within the previous three months; (*d*) the departure of every ship of which cognizance is taken shall be notified by telegram to the next port of call.
7. A ship leaving any port in the Eastern arena for a foreign port shall obtain a bill of health. This should be made an important document, corresponding practically to the vessel's case-sheet or hospital notes, giving its past history, present state, and treatment.
8. A ship leaving an infected port shall be inspected by a health officer prior to her departure. The inspection shall include such examination of the vessel, cargo, passengers and crew, food and water supply, the ship's relations with the shore, manner of loading and possibility of invasion by rats and insects, as will enable the officer to determine whether the requirements of the convention have been complied with. No communication with the shore shall be permitted after this examination. A similar inspection at suspected ports of departure may be demanded by the country of the port of destination.
9. When local conditions render the above provisions unsuitable the necessary modifications shall be made by general agreement of the signatory Governments.

Mention has been made above of a central intelligence bureau as a necessary part of the scheme. No department of the kind at present exists, and the author suggests that Singapore would be a most suitable site for establishing a Central International Epidemiological Intelligence Bureau for dealing with this and cognate matters. The possibility of such a bureau being installed for a term of years on an experimental basis through the agency of the Health Organization of the League of Nations is deserving of careful consideration. The signatory Governments of the Far East would, naturally, demand control, through some form of advisory board, of an organization in which they were primarily interested, and it is possible that one of the existing medical organizations in the Far East would be willing to undertake this duty, and no more suitable body could be found than the Far Eastern Medical Association. Apart from its utility under the proposed convention outlined above, such a bureau would greatly facilitate and improve the port health procedure as at present carried on. It is difficult to estimate the cost of the bureau, but the annual expenditure would probably approximate to £10,000.

Dr. Norman White has not specifically considered the Mecca pilgrim traffic and the labour traffic from country to country. The former is regulated by the International Convention, but the protection of the health of the East from diseases conveyed by returning pilgrims appears to have received too little attention in the convention. The migration of labour forces is governed by shipping ordinances and labour ordinances in most of the countries chiefly concerned, and bilateral agreements further control the traffic. There is, however, room for improvement, and the trade might be made the subject of a future convention. It is important that shipowners interested

in the traffic should be freely consulted; the enforcement of more stringent regulations in some countries than in others gives an unfair advantage to the shipowners of the latter.

In addition to a vast amount of information relating to the various ports and countries visited, the report contains a valuable chapter on plague in the Far East, in which the more important epidemiological facts emerging from a study of the disease during the last twenty-five years are dealt with in relation to the framing of measures of control in the conditions actually prevailing in the East. Separate chapters are also devoted to cholera and small-pox.

SCHOOL HEALTH WORK IN LONDON.

IN his report for 1923 as school medical officer, Sir William Hamer remarks that school medical work belongs practically to the present century. While the general death rate had been falling for forty years before 1900, owing to improved environmental conditions, infant mortality began to decline only from that time. The majority of mothers had enjoyed the advantages of elementary education, and the mother is practically the environment of the infant, so that, as urged last year by Dr. James Wheatley at the Portsmouth Meeting of the British Medical Association, the predominating influence has been the Education Act of 1870. The benefit appears not only in respect of infants, but also in the lowered mortality of school children. The Registrar-General, it is noted, has shown that in the fifty years 1861-1910 the most marked improvement has been at ages 5 to 14—the school ages—the decline in mortality being 55 per cent. In the earlier decennia, however, the ages 20-24 showed an even more rapid fall, owing presumably to migration; whilst in 1911-20 the age period 0-4 years came out best, and here infant and child welfare work may claim part of the credit. Comparing London with the whole of England and Wales, and recollecting Dr. Farr's remark that diseases chiefly incidental to children are twice as fatal in towns as in the country, London now comes out remarkably well, as shown in tables of mortality under 15 years of age. Statistics of improvement in verminous conditions tell the same story. So recently as 1913 flea-marked children in London schools were 28 per cent. of the whole, but in 1923 they were only 7 per cent. As regards nutrition in relation to unemployment, the results of investigation by the Scottish Board of Health, referred to in the BRITISH MEDICAL JOURNAL of July 19th (p. 122), are supported by London experience.

"The measures of social amelioration in force clearly do what they were intended to do, and in spite of the adverse economic conditions the condition of the school child in regard to health, nutrition, and physique is to-day very much better than it was in the decade which preceded the great war."

The percentage of children placed in the under-nourished category was 5.9, against 12.8 in 1913. Improvement in cleanliness is notable, and the percentage of elder girls with perfectly clean heads is now for the first time over 80. The condition of the teeth of entrant children is rather better than in the previous year. In 12-year-old boys the proportion with apparently sound teeth increased from 50 per cent. to 67 per cent. between 1913 and 1923, whilst extensive caries diminished from 10 per cent. to 2.7 per cent.; a corresponding improvement is shown by girls, who enjoy a higher degree of resistance to caries than boys. As regards adenoids and enlargemnt of tonsils, there is improvement, only 11 per cent. being affected, instead of 12.8 per cent. in 1922, 16.5 per cent. in 1921, and still higher figures in previous years. This is probably due, at least in part, to lessened oral sepsis and greater attention to dental hygiene. Investigation of two schools by Dr. E. O. Lewis indicates that removal of enlarged tonsils diminishes the risk of contracting infectious disease. In one school it was found that one in nine children with enlarged tonsils had contracted scarlet fever, as compared with one in twenty-eight children with normal tonsils. The proportion of children suffering from defective hearing, as ascertained at routine inspection, has been halved during the past ten years, and is now only 0.7 per cent. Without following details as to visual acuity, enlarged glands, heart defects, lung complaints, etc., analysis of the statistics relating to 200,000 children shows improving conditions which over a period of years are very striking. Notwithstanding great difficulties, including especially ignorance and apathy of some parents, a review of ten years' results

"leads to the conviction that the mountain of disability and suffering which the school medical service at its inception had to face has indeed begun to move. Independent observers in a position to know state that the London child is now a different being. Not only is the improvement marked as a whole, but analysis shows a steady advance year by year at each age and in each sex in a most consistent way."

As to general policy, unwise compulsion would defeat its object, but the more intelligent parents eagerly avail themselves of the council's facilities.

"Dr. James Kerr, whose clinical experience and knowledge of the conditions are unrivalled, has recently remarked upon the surprising improvement in the condition of children who have qualified for scholarships and come before him for medical inspection, and he particularly instanced their dental condition."

In 1913, out of 1,635 children examined for that purpose, 640 required dental treatment before they could pass the medical examination, but in 1923 of 1,560 so examined, only 111 were referred for dental treatment—a diminution from 39 per cent. to 7 per cent. While all this is excellent, very much remains to be done. At the primary reinspection of 188,348 children who had been referred for treatment or placed under special medical observation, 34,444, it was found, had not been treated and still required treatment. Of 55,528 children reinspected a second time, 31.637 (57 per cent.) were under treatment, or were in a condition to be discharged; the combined results of first and second reinspections, showed that 76.8 per cent. of the children found defective had obtained relief within a year of primary inspection. If dental defects were deducted from the total, 83 per cent. of the children were found to have been satisfactorily dealt with.

The report gives full details about medical treatment, school nursing, open-air education, employment of school children, physical exercises, the teaching of hygiene, the control of infectious disease in schools, and many other important matters.

School Feeding.

Though all children receiving school meals are not seen by the school doctor, he is often consulted about doubtful cases, and all menus are submitted to the school medical officer for approval. Necessitous children can get sufficient starchy food at home, and school feeding is mainly confined to supplementing the protein portion of the diet. The London rule is that every meal for a necessitous child shall contain at least 25 grams of protein. Milk and cod-liver oil are provided in school only for the under-nourished child, on medical advice and under medical supervision. Particulars as to provision of milk meals are given for the week ended January 24th, 1924. The numbers were 19,824 meals free or on part payment, and 45,911 on full payment, while 2,726 doses of cod-liver oil were given free or on part payment, and 5,891 on full payment. In addition many head teachers run milk clubs and arrange independently with dairies. The size of a school's milk meal list depends largely upon the opinion of the head teacher and care committees, and on their zeal and enthusiasm in seeking out suitable children and bringing them before the doctor as special cases. The restrictions under the Board of Education's circular of May 17th, 1922, resulted in more care and consideration of the case of the ill nourished child, to ascertain whether the giving of milk was in itself sufficient, and whether in one district children no longer needing milk were receiving it to the exclusion of children requiring it urgently in other districts. Differences of view cannot, of course, be prevented, but the position has been safeguarded by keeping children removed from the milk list under observation for a sufficient period. The milk supplied has been systematically examined. Of 1,116 samples, 116 (10.4 per cent.) were unsatisfactory—3.5 per cent. on account of added water and 6.9 per cent. on account of deficiency in fat. Sixty-eight meals were examined in the council's central laboratory, and in a number of cases attention was drawn to the need for increase in the protein or the calorie value.

British Medical Journal.

SATURDAY, AUGUST 16TH, 1924.

ANTE-NATAL CARE IN PRIVATE PRACTICE.

The discussion on the methods of the ante-natal clinic and their application to private practice, reported in full in this issue, covers many points of interest. It is in the first place a striking evidence of modern progress in preventive medicine that the discussion should have taken place at all. It is, perhaps, difficult for the medical student, or the recent graduate, to realize that the teaching of obstetrics—even during the student days of those who are still young enough to look forward hopefully from the midst of the years and who yet bear the burden and heat of the day—was unencumbered by any reference to the necessity for pre-maternity care. It was only in 1900 that Dr. J. W. Ballantyne, in a clinical lecture in the Edinburgh Royal Maternity Hospital, first gave voice to the conviction, "gradually developing within him," of the need for a special department set apart in maternity hospitals for the treatment of the various disorders of pregnancy. "Finally," he said, "it has seemed to me that there is a want in our hospital system—the necessity for some special institution in which pathological pregnancies in general might be both studied and treated," and it was only so recently as 1901 that, in response to his appeal published in these columns,[1] and entitled "A Plea for a Pre-maternity Hospital," there was endowed in the Edinburgh Royal Maternity and Simpson Memorial Hospital the Hamilton bed, the first to be set apart in any hospital for the treatment of the various morbid conditions of pregnancy. Before his death Ballantyne had the satisfaction of seeing the principles which he had advocated with such untiring devotion receive their practical application in hundreds of ante-natal clinics throughout the country. It would have been a source of great gratification to his admirers had he been spared to take part in the Bradford discussion, and to receive the ovation that would without doubt have been accorded to him as the honoured pioneer in this important department of obstetrics.

The discussion at Bradford will probably be noted in after years as marking an epoch. The last two decades have been occupied with propaganda—not exclusively directed to the lay public, but also to the general practitioners engaged in the practice of midwifery, in order to impress upon them the necessity for pre-maternity care. Neither was the path of the propagandist always smooth. There was much talk of the difficulty of carrying out ante-natal supervision in private practice. Women, it was said, would view with alarm and as a herald of coming disaster any attempt at ante-natal examination unless there was some obvious disturbance of health to indicate its necessity. From this point of view the paper of Dr. Eneas K. Mackenzie (p. 269) is of much significance. In a country district of the Scottish Highlands, and with a large and widely scattered panel practice necessitating 11,200 miles of travelling yearly among a population composed chiefly of fisher folk, farm labourers, and crofters, he finds it possible to supervise the pregnancies of all women for whose confinements he assumes responsibility. "The contention," he says, "that in general practice there is no time for ante-natal care I find baseless, as I have also found the statement that patients resent such attention."

Turning to the discussion itself, there are several points that are worthy of notice. It is, of course, inevitable that those who have large experience of the conduct of clinics in any branch of medicine will develop peculiar and special methods of diagnosis and treatment that are not accepted and practised by all; and that pre-maternity work is no exception to the rule is shown by the divergent views expressed, for instance, regarding the value of external pelvimetry. There can be little doubt that, generally speaking, the more experienced an obstetrician becomes the less he relies upon this aid to diagnosis of pelvic deformity, and in many of the minor degrees no conclusive indication of their existence may be gained by measurement of any of the external diameters, but only from estimation of the diagonal conjugate. After all, pelvic measurements merely serve in most cases as a warning of possible dangers ahead. They fail to take into account the other factor in the case—the foetal head, which still remains the best pelvimeter. We are not disposed, however, to regard so lightly as Dr. Willett seems to do the information to be gained by combined internal and external determination of the relationship between the head and the pelvis, nor to accept his contention that one can decide for or against Caesarean section by mere abdominal palpation. Such a determination takes no account, for example, of so simple and frequent a condition—especially in primiparae, in whom these difficulties mainly arise—as a loaded colon, the existence of which can only be excluded with certainty by vaginal examination. Every experienced obstetrician knows of the case in which a mobile and perhaps disproportionately large head descends easily into the pelvic cavity after the administration of an enema. While the value of vaginal examination is generally obvious, its risks were rightly emphasized by some of the speakers, and there can be no doubt that it is a dangerous proceeding if not carried out with due regard to the principles of asepsis.

We have said that the last two decades have been occupied in bringing home to the medical profession and to the State the importance of pre-maternity care. The recognition by the latter of the benefits to the race that are likely to accrue, and the discussion which we publish to-day, may be taken as evidence that the advocacy of Ballantyne and his tardy followers has not been in vain, and that the profession has at last universally acknowledged the urgency of the teaching and practice of preventive midwifery. As Major Moss said, after commenting upon the present unanimity of opinion on this point, "That alone is something achieved already. We have, as it were, assembled at the starting point, and a good bombardment of the public with our ideas will be a helpful preliminary to the launching of our schemes." During the next decade or two the education of the public will continue, and it is to be hoped that our teaching centres and hospitals will rise to the new occasion. Opportunity must be given to the student to learn the principles of ante-natal diagnosis. This is all that is necessary. Expertness can only be acquired by constant practice in the years after graduation. For post-graduates the larger lying-in hospitals should organize courses of instruction at convenient times; and only those should be given charge of a pre-maternity centre who have had special post-graduate experience in obstetrics and are practically acquainted with the

[1] British Medical Journal, April 6th, 1901.

method of carrying on a large clinic. As Dr. R. W. Johnstone truly said, "Ante-natal observation no longer means merely the testing of the urine and the examination of the pelvis." The more experience one acquires in ante-natal work the more numerous its opportunities appear. Ballantyne foresaw these possibilities at the very start. In 1901 we find that one of the benefits which he expected to follow the establishment of pre-maternity wards was the opportunity that such beds would afford of studying pregnancy diseases and normal pregnancy metabolism. It is during the next decade that this ideal will be realized. Indeed, it is being realized already, for in some of the larger teaching centres such studies have been in progress on an intensive scale for some considerable time.

Thus all along the line the forces of progress are massing. There has been a tendency in the past among other branches of the profession, and not altogether without reason, to look upon obstetrics as a crude and unprogressive science. Indeed, it is only too true that with the exception of the advances rendered possible by the advent of anaesthesia and of Listerism (chiefly in Caesarean section) there has been little progress in obstetrics during the last fifty years. This is a reproach that should soon be removed, and in its removal all who are engaged in the teaching, study, and practice of obstetrics—specialist and general practitioner alike—can play an honourable part. To the younger obstetrician with a scientific bent the gate of opportunity stands wide open. Inside are ranged the "secret truths that yearn for birth." The time is ripe. May their delivery be safely accomplished, and soon!

FRUITS OF THE ANTITUBERCULOSIS CAMPAIGN.

AT the fourth Congress of the International Union against Tuberculosis, held at Lausanne on August 5th, 6th, and 7th, a number of important papers were read, such as Professor A. Calmette's discourse on the permanent separation between tubercle bacilli and paratuberculosis organisms, and on the modifications which can be artificially produced in the virulence of tubercle bacilli, although they do not thus become paratuberculosis bacilli. But the most fundamental question raised was that so ably discussed by Sir Robert Philip, who for forty years has devoted his energies to the antituberculosis campaign—namely, Has this campaign justified its existence and diminished the toll levied by this infection on the human race? In arriving at an affirmative conclusion Sir Robert brought forward statistics from two sources—from England and Scotland and from North America. In many of his arguments he was supported by Professor Knud Faber of Copenhagen, who showed that in Denmark, where the antituberculosis campaign has been widespread, specially well organized, and provided with a more liberal State expenditure than in any other country, the death rate from tuberculosis is the lowest of all European nations, being in 1922 at the rate of 9.5 as against 11.2 per 10,000 for this country.

Sir Robert Philip passed in review and refuted the explanations other than the influence of the antituberculosis campaign sometimes given for the fall in the mortality from tuberculosis since 1870. It has often been pointed out that this decline began before the campaign and open-air treatment came into existence, and it has therefore been suggested that the decline in the tuberculosis mortality is merely part of the reduction in the general mortality, and no doubt environmental factors have exerted an important influence, especially in the initial fall in the tuberculosis mortality during the seventies and eighties. But on the basis of many statistics Sir Robert Philip showed that the progressive decline in the general mortality, which is on a uniform rate, cannot explain the accelerated fall in the tuberculosis mortality, and that a much more powerful influence has been brought to bear on tuberculosis than on the other forms of disease collectively. Thus in Scotland, during fifty years (1871-1921) the death rate from all diseases was reduced by less than half, whereas the mortality from tuberculosis fell by more than two-thirds. In Denmark the fall in the tuberculosis death rate has been even more abrupt than in other European countries. A further point of great significance as regards the efficacy of the campaign is that the drop in the tuberculosis mortality has occurred most conspicuously in the earlier periods of life, up to the age of 25; in Denmark Knud Faber shows that up to the age of 14 years the tuberculosis mortality has fallen since 1890 by more than 70 per cent., and in the discussion Professor Winslow mentioned that in the United States pasteurization of milk has brought down the statistical incidence of non-pulmonary tuberculosis.

The suggestion that the decline of the tuberculosis mortality is due to an advancing immunization of the civilized population against the disease does not receive support from Sir Robert Philip's survey of the conditions in nations of the older civilization, which should show the effect of such a factor in a more or less uniform degree, for there are striking differences between the rates in England and Scotland on the one hand and in Ireland on the other, as, indeed, there are between various cities, both in Great Britain and also in the United States of America. The view that variations in the mortality rate of tuberculosis in different countries depend on differences in racial characteristics cannot be entirely set aside, for the Jews are specially resistant and some Celtic strains are peculiarly susceptible, but it does not explain the decline in the rate since 1871 in Britain, with its fairly constant racial qualities of the population, or the high tuberculosis mortality in Austro-Hungary and the low rate of mortality of these races when domiciled in America. In short, all the evidence points to the beneficent influence of a widespread and well planned campaign in diminishing the death rate from tuberculosis. One authority, indeed, went so far as to express to Sir Robert Philip the opinion that "tuberculosis is on the run."

ROBERT KOCH.

THE life of Robert Koch has often been told—his early start as a bacteriologist, lacking both leisure and laboratory, and his quick but not quite constant spring to fame and all facilities. It is an interesting story, however, and of so much importance to the history of bacteriology that it will bear telling again. This Professor Martin Kirchner has done in a small book.[1] It is very simply written, but is the more impressive for its simplicity. In 1876, at the age of 33, Koch was engaged in private practice in Bomst in Wollstein, a little town of 4,000 inhabitants, and also held the post of Kreisphysikus, a position roughly equivalent to that of part-time medical officer of health. It would be hard to conceive a position more unfavourable to research, but Koch worked in such time as he could spare from his other duties, with very limited equipment, without

[1] *Robert Koch.* Von Professor Dr. Martin Kirchner. Band V, Meister der Heilkunde. Vienna and Berlin: Julius Springer. 1924. (5¼ × 8¼, pp. 84; one portrait.)

any assistance, in isolation from other investigators, and with no library facilities. It was under these conditions that he succeeded in working out the life-history of the anthrax bacillus. He developed methods for cultivating bacteria on solid media, and proved that the anthrax bacteria formed spores, that these spores could develop into bacteria, and that the cultivated bacteria, when inoculated into animals, produced the disease anthrax. This work established firmly the causation of anthrax, and was at once recognized by Cohnheim as being of the greatest fundamental importance. Koch's scientific reputation was established by it, but he continued to combine general practice and bacteriological research until 1880, when he was called to the Kaiserlich Gesundheitsamt in Berlin. Here he had adequate time and equipment for research, and was amidst a circle of other brilliant investigators, including Loeffler, Gaertner, and Gaffky. In these favourable surroundings he became one of the leaders in the rapid advance of the new science of bacteriology. In 1882 he discovered the tubercle bacillus, possibly the chief single discovery of his career. Koch himself always regarded his investigations on tuberculosis as the most important portion of his life's work. In 1883 Koch was sent to Egypt and India to investigate cholera, and succeeded in demonstrating that the comma bacillus was the causal agent. In 1890 he created a great sensation by declaring that he had discovered substances which would arrest the growth of the tubercle bacillus, not only in the test tubes, but also in the living body. This discovery of tuberculin aroused immense general interest, but the final result was a severe disappointment to the early hopes, and Koch felt this disappointment very keenly. From boyhood he had had a keen desire to travel, and during the last fifteen years of his life he was able to gratify this passion to the full, for nearly half his time was spent in the tropical centres of disease. He visited practically every tropical country in Africa and Asia, investigating diseases both of animals and men. In an interval of travel, however, he attended the International Tuberculosis Congress in London in 1901, and caused a great deal of surprise by announcing that human and bovine tuberculosis were separate forms, and that bovine tuberculosis was practically harmless to man. This conclusion gave rise to long controversy, and though the distinction between the two strains is now generally accepted, the belief that the bovine is not injurious to man is known to be incorrect. In 1904 Koch retired from the post of director of the Institute for Infectious Disease, a post he had held for thirteen years; he continued to work, however, and in 1906 went to East Africa to investigate sleeping sickness. He died in 1910 at the comparatively early age of 67. The mere recital of Koch's chief discoveries indicates better than anything else the dominant part he played in the development of bacteriology.

DANGERS OF ZINC STEARATE DUSTING POWDERS.

The attention of the medical profession in the United States has been specially drawn to the serious consequences of using an apparently harmless substance—zinc stearate—in dusting powders for infants and young children. The untoward results range from severe bronchopneumonia to simple toxaemia of variable duration. Accidents have occurred, attributable, it seems, to the inhalation of the powder—as, for example, when deposited on the hands of the child. Heiman published a paper in 1922, recording 12 cases of poisoning following this accidental inhalation. Of his series, one patient died within twenty-four hours, three developed bronchopneumonia from which they recovered, and in the remaining cases there were symptoms of partial asphyxia without definite pulmonary disease. Further publicity was given to the question in 1923, when the Section on Diseases of Children recommended unanimously to the House of Delegates of the American Medical Association that warning labels should be placed on all containers of the powder, and that the form of the container be modified so as to prevent the risk of accidents. In response to a request for information in February last by the *Journal of the American Medical Association* records of 34 other cases were obtained, and these have been published in our contemporary's issue of July 12th. Of these cases 5 had terminated fatally, the youngest patient, an infant aged 3 months, to whom a tin of the powder had been given as a plaything, dying in one hour. It was noted that in all cases the onset of the symptoms was immediate, and that they varied in severity according to the amount of the powder inhaled. The collapse observed in many patients strongly suggested a toxic effect, possibly zinc poisoning. In their conclusions the American investigators state that zinc stearate powders possess no special advantage over other and harmless preparations, such as those containing talc. While, doubtless, the recommendation to attach warning labels to the zinc stearate containers has been adopted and will serve to prevent such tragic accidents in the future, it would seem to be, nevertheless, very much open to question whether the use of this type of powder is to be commended. So far as can be ascertained, dusting powders consisting of zinc stearate are rarely employed in this country, but in view of the accidents following their use in America it would seem desirable to bring their qualities under the notice of the medical profession.

THE INTERNATIONAL UNION AGAINST TUBERCULOSIS.

The International Union against Tuberculosis, which was founded in 1920, has published the first number of its *Bulletin*.[1] The internal affairs of the union, with which twenty-four countries are affiliated, are directed by an executive committee and a council. The council meets once a year, and, in addition to doing administrative work, hears a scientific paper from some person of authority. These papers will be published in the *Bulletin*, which is to be issued quarterly in French and English on facing pages. The first number contains a short account of the activities of the union from 1920 to the present time. Summaries of subjects discussed at the international conferences, held in Paris in 1920, in London in 1921, and in Brussels in 1922, are provided, and the constitution and by-laws of the union are set out in full. It was formed primarily among the nations signatory to the covenant of the League of Nations, and includes the United States of America. Its objects are to co-ordinate the efforts of all the organizations engaged in the campaign against tuberculosis, and to collect and distribute information on questions concerning the scientific and sociological study of tuberculosis. The *Bulletin* contains a report of the meeting of the council held in July, 1923, and also of the meeting of the executive committee held in December, 1923. To the last council meeting Professor Bezançon contributed an exhaustive and detailed criticism of the methods used for the detection of tubercle bacilli in sputum, pus, cerebrospinal fluid, faeces, urine, and blood. Full references to the authors of various methods are given. The *Bulletin* also contains news from the various countries affiliated to the union. The national associations of Czecho-Slovakia, Italy, and Alsace-Lorraine held conferences during 1923. The English National Association held its tenth annual conference in July of this year. The Belgian National

[1] *Bulletin de l'Union Internationale contre la Tuberculose.* (Vol. I, No. 1.) Issued by the Executive Committee, 2, Avenue Velasquez, Paris VIIIe. (Medium 8vo, pp. 127.) Subscription 12 francs (French) for the year 1924.

League has followed the example of the French National Committee of Defence against Tuberculosis by printing notices in the daily press to put the public on guard against propaganda in favour of certain treatments of tuberculosis. A complete list of the governments and associations affiliated with the International Union, together with councillors and ordinary members, is appended. The fourth conference of the International Union was held at Lausanne from August 5th to 7th. On August 5th Professor Calmette of Paris opened a discussion on the virulence of the tubercle bacillus. On the following day Professor Forssner of Stockholm introduced a discussion on the relation of tuberculosis to pregnancy. A third discussion was opened by Sir Robert Philip of Edinburgh on the effects of the antituberculosis campaign upon the diminution of the mortality from tuberculosis in different countries (see page 285 of this issue). After the conference visits were paid to antituberculosis centres in various parts of Switzerland.

CONFERENCE OF CREMATION AUTHORITIES.

THE third annual conference of cremation authorities was held at Wembley on August 1st, and was attended by delegates of cremation authorities, representatives of the Federation of Cremation Authorities and of the Cremation Society of England. During the morning session the constitution of the Federation of Cremation Authorities was dealt with and cremation regulation and propaganda work considered. In the afternoon Bishop Gore opened the proceedings, urging strongly the value of this way of dealing with human remains, more especially in crowded populations and great cities. He hoped to be able to dissipate a certain fog of prejudice which still affected the sentiments of many people. There was no theological objection to this mode of disposal of the dead, and he believed that if the practical advantages of it were advertised the false sentiment against it could be overcome within a short time. Sir Thomas Horder then took the chair and suggested that a stronger appeal to the general public could be made from the sentimental and aesthetic point of view. The Society was just fifty years old, and its progress was still slow owing to lack of appreciation of sanitary and economic arguments. The ensuing discussion included the following points: cremation associated with public health and economics; the aesthetic point of view and the ideal crematorium; education and propaganda work. In the annual report of the council it is stated that the total number of cremations in Great Britain during the last twelve months was 1,986. The slight decrease of twenty-three on the figures for 1922 could probably be related to the abnormally low death rate, and in this sense was not unsatisfactory. When full statistics were available it was probable that the cremation ratio to the death rate would show a marked improvement. Over 25 per cent. of well known names published in the *Times* review of its obituary columns for the past year were of those who had been cremated. A new crematorium has been completed at Pontypridd, and the provision of crematoria has been under consideration at Cardiff, Chiswick, Canterbury, Richmond-on-Thames, and in the West of England.

ALLEVARD-LES-BAINS.

DR. H. VALLÉE sends an account of the sulphuretted hydrogen cure for diseases of the nose, throat, and larynx at Allevard-les-Bains, Isère, France. The season extends from June 1st to September 30th, and twenty-five days is stated as the duration of treatment. Allevard is a picturesque town in the mountains of the Dauphiné, 1,500 feet above sea-level, and reached from Paris by Aix-les-Bains and Chambéry, or Lyon and Grenoble. At Pontcharra on the P.L.M. Railway there is a junction for Allevard. The climate is described as temperate, and very suitable for children and nervous people. The town is protected from the winds by surrounding mountains, and there are easy and delightful excursions in the neighbourhood. The temperature of the spring is 42° F.; the water is limpid and transparent, and contains sulphuretted hydrogen, carbon dioxide, and nitrogen. Dr. Vallée describes two methods of treatment at Allevard. The first consists of gaseous inhalation at the ordinary temperature; for this there are seven large rooms. In the middle of each room a fountain of spring water is thrown with great force on to a large metallic disc suspended from the ceiling. The water falls in a fine shower into a large basin and thence into smaller ones, breaking up each drop, and so discharging its gas content; in this way a bath of gas mixed with air is produced. Dr. Vallée reports that patients can take several inhalations each day, the first lasting only two or three minutes to avoid discomfort: children are said to bear this treatment very well. In the second method warm gaseous inhalations are taken in four rooms in a similar way to that in the cold room, except that the vapour of the heated water rises from the open floor and produces a thick fog in the room. The patients, in bath gowns, remain in these rooms from twenty to forty minutes, and after inhalation often take a general douche or hot foot-bath. This form of treatment is considered by Dr. Vallée to be very efficacious for such chest affections as emphysema, chronic bronchitis, and asthma. The water is also used for nasal douches and for gargling; dry chronic pharyngitis and tonsillitis are said to be much benefited. Diseases of the larynx, such as chronic catarrhal and chronic hypertrophic laryngitis, and dry catarrhal middle otitis are other conditions for which this treatment is recommended; contraindications to it include tuberculosis, acute or febrile conditions, arterio-sclerosis, cancer, old age, and diseases of the heart and kidneys.

CANCER AND LUBRICATING OILS.

EARLY in January the trial began of a workman's compensation case which turned on the point whether cancer of the scrotum was to be considered a disease to which "mule-spinners" in the cotton industry were particularly liable in consequence of the nature of their employment, and for which, therefore, they should receive compensation. References to this appeared in our issues of February 16th (p. 289) and April 12th (p. 679). On July 26th Judge Mossop, at Ashton-under-Lyne County Court, found in favour of the cotton-spinner concerned, awarded £26 5s., the agreed damages, and gave a declaration of liability on the part of the employers should the disease recur. The plaintiff at present appears to have completely recovered. In a written judgement the judge gave his reasons as follows: "(1) Plaintiff contracted the disease known as cancer of the scrotum; (2) this disease manifested itself for the first time whilst he was employed by the respondents, who were his last employers; (3) his employment brought him into contact with a moving bar, which caused constant friction close to his scrotum; (4) his employment involved his overalls near the scrotum being constantly sprinkled with mineral oil; (5) mineral oil is an irritant; (6) the applicant, when at work, used overalls which could be easily penetrated by the oil; (7) the atmosphere in which he worked was humid; (8) investigation has proved that cancer of the scrotum is quite common amongst mule spinners; and (9) combining the facts numbers (1) to (7), the conclusion is irresistible that there is a connexion between the disease and the employment." He further

found as a fact that the return of the disease was reasonably probable. This ruling has had a curious sequel. A claim is being made against an Oldham mill company under the Workmen's Compensation Act in the case of a mule-spinner who has been dead two years and who ceased his connexion with spinning eight years before his death. We understand that an appeal against the county court judge's ruling has been lodged.

EQUINE INFECTIOUS ANAEMIA.

Infectious anaemia, or swamp fever, is an obscure and insidious septicaemic disease, which until recently was believed to be confined to the equidae. It generally has a fatal issue, but cases occur in which the symptoms, being limited to a few slight attacks of fever, escape notice, and such animals may act as carriers. The disease may be acute or chronic, with more or less irregularly intermittent or remittent fever as the most constant characteristic. A horse may die from the effect of a single attack, but in some cases the fever is mild and the other symptoms so indefinite that injection of blood is necessary to determine the existence of disease. The most prominent symptom is progressive anaemia, which is much more pronounced in chronic than in acute cases. It is accompanied by a train of secondary symptoms such as gastro-intestinal disturbances, cachexia, and icterus. The anaemia is very variable: there is generally a considerable diminution of the red blood cells (from about seven to two or even one million per cubic millimetre), with the occasional occurrence of nucleated and other abnormal cells. There is leucopenia with a relative polymorpho-leucocytosis, but the number of leucocytes increases during the bouts of fever. The disease is essentially a septicaemia marked by subserous or subendocardial haemorrhages in the more acute cases; by alteration in the bone marrow; by degeneration of the parenchyma of the heart, liver, and kidneys, and enlargement of all the lymph glands of the body. The causal organism is a filtrable virus which is capable of existing in the blood of horses that have apparently recovered for periods as long as twelve years. In addition to occurring in the blood, the virus is found in the urine, nasal and ocular secretions, and milk, but not in the faeces. It has been demonstrated in the blood of newly born foals. It is easily destroyed by heat and sunlight, but not by drying and decomposition. The incubation period is from five to nine days. There appears to be no immunity. The organism has not yet been seen or cultivated, although certain Japanese workers are of opinion that it is a spirochaete (*S. equi infectiosa*), 3 to 25 μ long and about 0.3 μ broad, with five to seven rather loose spirals and a short terminal filament. This theory has not yet been generally accepted. The disease is very widely distributed in Europe and elsewhere, and appears to be spread by the mechanical agency of various blood-sucking flies, including *Stomoxys calcitrans*, the stable-fly. Man was believed to be refractory to the disease, but Peters[1] has recently reported the case of a Dutch veterinary surgeon who in May, 1917, contracted infectious anaemia while treating horses suffering from it. Until the end of 1918 his symptoms were identical with those observed in horses. He remained more or less in the same condition until the beginning of 1919, when a perceptible improvement was noticed. During the period, less than 1 c.cm. of his blood injected into a horse was sufficient to cause death. The incubation period and symptoms were identical with those shown by another animal injected with blood from an equine source. Three horses thus inoculated died. One was injected with filtered blood and succumbed to the disease, thus confirming the opinion that it is due to a filtrable virus. In 1923 the blood of the human patient appeared to be free from the virus. Peters, though he does not believe that this disease has anything in common with human pernicious anaemia, suggests that it may afford a possible explanation of some of the more obscure cases of anaemia in man.

[1] *Presse médicale*, 1924, p. 105.

THE PARLIAMENTARY SESSION.

The parliamentary session, which was adjourned on August 7th until September 30th, proved (our Lobby Correspondent writes) much less sensational than had been predicted by those who overlooked what Mr. Ramsay MacDonald said on assuming office. He recognized that, as Prime Minister of a Labour Administration, he would nevertheless be the head of a minority only, and that in those conditions his party would be compelled to moderate their policy and to accept defeats other than an actual vote of want of confidence. In those circumstances no proposal for a capital levy or for the nationalization of any industry has been put forward, the Cabinet being content to move along lines which, subject to occasional vicissitudes, secured adequate support. Indeed, the constitution of the Government more or less required also that movement should be by degrees. The Ministry received its sharpest knock on an Evictions Bill introduced by Mr. Wheatley, under which a landlord would have been unable to recover possession of a house if the tenant were unemployed. This was rejected, and one introduced by Mr. E. D. Simon, a Liberal member, to make evictions subject to certain new conditions was passed instead. The provisions of the Housing Bill are too familiar for need of summary here. It was subjected to considerable amendment in Committee and was opposed by the Conservatives because of their belief that it would not serve the purpose intended. With the qualifications made in Committee the scheme is subject to review every three years and also to stoppage by the Minister of Health if the rate of building falls one-third behind that set forth in the bill. A measure to amend the unemployment insurance law had for a principal feature to remove the gap which, according to law, was made at certain periods in the allowances, but which, as a matter of fact, has been generally yielded to meet emergencies. Another bill substantially reduced the limitations put upon the qualification for old age pensions. The greatest criticism in this connexion was as to the barrier against work for pensioners over 70 years of age. The bill to set up wages boards for agricultural workers and the London Traffic Bill are two other pieces of legislation touching widely different subjects, which occupied a good deal of time in Committee. As was understood would be the case when the Government was formed and Mr. Ramsay MacDonald undertook the Foreign Secretaryship as well as the Premiership, he has been little seen in the House of Commons, save at question time and for the purposes of statement or speech in big debates, but his influence as head of the Government has been no less strong on that account. His great ambition has been to exercise influence for a European settlement, and international affairs have greatly occupied him. Mr. Roberts has proved a sympathetic Pensions Minister. The Home Secretary, Mr. Arthur Henderson, is seeking to engrave his name on the Statute Book by a compendious bill for amending and enlarging factory legislation. One objection taken to this measure is that it still leaves administration distributed among so many departments. Probably an amendment embodying this point will be submitted by Dr. Fremantle when the second reading is moved in the autumn session. This will, it is understood, have sympathy from most, if not all, of the medical group.

FORMALDEHYDE IN FOOD.

REPORT BY FOOD PRESERVATIVES COMMITTEE.

THE Food Preservatives Committee of the Ministry of Health has issued this week an interim report on the use of formaldehyde as a preservative for food, with special reference to its use in connexion with chilled beef.[1] The report concludes with a recommendation that the treatment of meat with formaldehyde or any of its derivatives should be specifically prohibited.

This departmental committee was appointed in July, 1923, by Mr. Neville Chamberlain, then Minister of Health, and is now constituted as follows: Sir H. C. MONRO, K.C.B. (chairman), Professor W. E. Dixon, M.D., F.R.S., Sir A. Daniel Hall, K.C.B., F.R.S., Dr. J. M. Hamill, Mr. P. A. Ellis Richards, Professor F. G. Hopkins, M.B., F.R.S., Dr. G. R. Leighton, Dr. A. P. Luff, Dr. Charles Porter, and Mr. G. Stubbs. The secretary is Mr. A. M. Legge of the Ministry of Health. The terms of reference of the committee are to inquire into the use of preservatives and colouring matters in food, and to report (1) whether the use of such materials, or any of them, for the preservation and colouring of food is injurious to health, and, if so, in what quantities does their use become injurious; (2) whether it should be required that the presence of such materials, and the quantities present, in food offered or exposed for sale should be declared.

The present report, which is signed by all members of the committee, and dated June 12th, 1924, is made in response to a request for a special report on a process (named after its inventor the Linley process) for the preservation of chilled beef by means of formaldehyde. The aim of this process is to make it possible to import beef from distant countries in a chilled instead of a frozen condition, and thus to be sold to the public in a condition more closely approximating to that of fresh beef. But the Linley process forms part of a larger subject—namely, the use of formaldehyde as a preservative of foods generally—and in the committee's opinion its consideration cannot be satisfactorily divorced from the wider question. Accordingly this interim report deals with the use of formaldehyde as a preservative for food in general, with special attention to its particular application as a preservative of chilled beef in the Linley process.

Formaldehyde as a Food Preservative.

A 40 per cent. solution of formaldehyde in water is known as "formalin," and it is as formalin that formaldehyde comes into commerce for various purposes, including its use as a preservative for food. The committee proposes to deal in its final report with the objections which are common to the use of preservatives in general in food; at this stage it merely states that these objections are applicable to formaldehyde with no less force than to other preservatives. The report continues:

"Formaldehyde is a preservative substance which is inimical to life and to vital processes of all kinds; it is a powerful protoplasmic poison. Formaldehyde when ingested exerts an irritant action upon mucous membranes, and after prolonged use appears to cause inflammatory changes in the liver and also in the kidneys, where a portion of it is excreted. In the body formaldehyde is partly oxidized to formic acid and partly excreted unchanged; in its passage through the body it combines with tissue proteins, and this combination renders its excretion slow, so that it is probably cumulative; and this feature makes its use as a preservative of food particularly objectionable. Formaldehyde may retard digestion even when present in food in comparatively great dilution, and it combines with the protein constituents of foods, forming a compound which is less digestible than the original substance. Even if this formaldehyde-protein compound is ultimately digested and the products of digestion are absorbed, it is possible that these products are abnormal in character, and present knowledge does not justify us in asserting that they could be regarded as unobjectionable and without effect upon the normal metabolic processes of the body. On the contrary, recent advances in our knowledge of biological processes point to the far-reaching importance of the effects produced upon metabolism and nutrition by extremely minute amounts of substances ingested and absorbed, and in view of this a substance such as formaldehyde, which is known to produce gross changes in the composition of food materials and to be inimical to life even in high dilution, must be regarded with grave suspicion in regard to its possible ultimate effects upon the normal processes of metabolism."

[1] London: H.M. Stationery Office, or to be purchased directly through any bookseller. 1924. 2d. net.

Sir George Buchanan fifteen years ago, in a report to the Local Government Board, referred to the possible use of formaldehyde for concealing incipient decomposition in meat and for hiding any smell of staleness or putrefaction. As to this, the committee, of course, reprobates the foisting upon consumers of an article which has already begun to decompose. Returning to the main question, the report proceeds:

"We have heard evidence in regard to the use of preservatives in food from a large number of firms engaged in the preparation, sale, and importation of a large range of food materials and also from associations and societies representing food traders' interests, but from none of these, with the exception of the firm of meat importers already mentioned and one other witness, did we receive any request that formaldehyde should be permitted as a food preservative. It would appear that the undesirableness of using this substance as a preservative is generally recognized by traders. We are aware that public analysts occasionally find formaldehyde in certain foods such as milk, but no milk vendor of any standing would tolerate this practice, which in the case of milk is definitely illegal. Quite recently certain consignments of caviare imported into England have been found to contain formaldehyde in considerable quantities, but appropriate administrative action on the part of the Port Medical Officer and local authorities concerned led to the abandonment of this use of the preservative. When formaldehyde is added to food nowadays it is usually done by irresponsible persons, and its use as a food preservative appears to be comparatively rare and sporadic. We understand, however, that butchers are being supplied to some extent with a solution of formaldehyde for treating the surface of the meat, although it is possible that they may be unaware of the nature of the material they are using. Medical and scientific witnesses, both those who gave evidence before us on behalf of food traders and also those who spoke on behalf of local authorities and other organizations concerned with public health interests, neither asked that formaldehyde should be recognized as a permissible food preservative, nor when questioned failed to agree that formaldehyde was an objectionable substance to use in connexion with food. A witness who voiced the opinion of the British Medical Association was emphatic in his condemnation of this preservative.

"There is in this matter an almost complete consensus of opinion amongst commercial and public health interests. These interests are too often opposed, but we desire here to record our impression that among the more enlightened and far-seeing firms engaged in the preparation, sale, and distribution of food there is a growing tendency to recognize that the true interests of the trader are similar and run parallel with considerations affecting the interests and health of the consumer.

"The Departmental Committee on Preservatives and Colouring Matters in Food which reported in 1901 regarded the addition of formaldehyde to food or drinks as so objectionable that they recommended that its use for such purposes should be absolutely prohibited. We may add that, with scarcely an exception, every country which has made legal enactments or regulations in connexion with the purity of its food supply has prohibited the addition of formaldehyde to food either specifically or implicitly in a general prohibition of preservatives.

"Having regard to the interests of the trader and of the consumer we have no hesitation in recommending that the addition of formaldehyde or any of its derivatives to food or drink should be absolutely and specifically prohibited."

The Linley Process.

The committee carefully considered representations made to it that the Linley process is not open to the recognized objections to the ordinary use of formaldehyde as a food preservative, on the ground that owing to the special method of application only a small amount of formaldehyde is required and the quantity absorbed by the meat is negligible.

The object of this process is to enable beef to be carried chilled at a temperature of about 29° to 30° F. from distant countries so as to arrive here in good condition and free from moulds. A description of the process in its essentials, as supplied by the inventor, is given in the report. It was in operation some years before the war in connexion with the transport of some, though by no means all, of the chilled beef sent to this country from the Argentine. The Linley apparatus was installed in several abattoirs in the Argentine; but no abattoir in that country controlled by United States firms ever adopted the process, and without its aid these firms were able to export chilled beef to England successfully. During 1909 and 1910 five trial consignments of chilled beef treated by the Linley process were sent from Australia, but after that date shipments were discontinued. Sir G. S. Buchanan's inquiries in 1909, in association with Dr. S. B. Schryver, led him to conclusions unfavourable in general to the treatment of chilled beef with formaldehyde, and he suggested that the use of this substance might be limited to disinfecting the holds of ships before the meat was introduced. After this the use of the Linley process in the importation of chilled beef was kept under close observation by the Local Government Board. The importers concerned knew that consignments were being officially sampled, and were from time to time warned that in the Board's opinion consignments contained excessive amounts of formaldehyde.

"They doubtless endeavoured to keep the amount of formaldehyde as low as possible, but the widely varying amounts of formaldehyde which nevertheless were found appear to indicate what might be expected from the nature of the process—namely, that its control is difficult, and that although it is possible to regulate the amount of formaldehyde admitted to the beef it has not proved practicable to control, with any degree of certainty, the amount which the beef may actually absorb. It would appear, also, that the degree of penetration may be considerable—the presence of formaldehyde having been demonstrated at a depth of 30 mm. even when the treatment of the beef with formaldehyde has been slight."

Since August, 1914, when the importation of chilled beef ceased, the Linley apparatus has not been revived. Early in 1923 the Argentine Government was considering whether this process should be recognized, but before making any pronouncement consulted the British Government, which replied that the revival of the process would not be in the interest of the consumer. In a decree dated February 20th, 1923, the Argentine Government prohibited the treatment of meat by the Linley process. The report continues:

"The present position is therefore as follows. The country with the largest export trade in chilled beef has prohibited the treatment of chilled beef with formaldehyde. The United States Government has specifically prohibited the importation of meat treated with formaldehyde. Every other country, with scarcely an exception, which has made regulations in connexion with the purity of food has prohibited, either explicitly or implicitly, the treatment of any food material with formaldehyde. Finally, the Linley process is not now in operation in any part of the world.

"The chief reason given for desiring the resumption of the process is that it will enable the establishment of a trade in chilled beef from Australia, since under present conditions the journey from Australia is too long to permit the successful transport of chilled beef to this country without the aid of some such process. It is hoped that if a process of this kind is permitted such a trade can be created, and the importer will be able to obtain a higher price than Australian beef imported in a frozen condition fetches at the present time."

Early this year a trial consignment of chilled beef treated by the Linley process was arranged between Australia and London. This experiment failed, and the whole consignment was subsequently condemned by the medical officer of the Port of London as unsound and unfit for food, and was surrendered by the importer for destruction. The amount of formaldehyde found was relatively small, but traces were detected as deep as 30 mm. from the surface of the meat, showing that formaldehyde penetrates into the meat with ease and does not confine itself merely to the surface. The inventor ascribed the failure of the experiment to several causes: for example, improper slaughtering, insufficient care in dressing and handling of the carcasses, improper hanging of the meat, and inefficient working of the fan for circulating air in the hold. The committee adds that the conclusions at which it has arrived have not been influenced by the failure of this experiment.

Conclusions.

The report next discusses practical difficulties in connexion with chilled beef which would arise if it were justifiable to assume that formaldehyde was sufficiently unobjectionable to enable it to be tolerated in small quantities in foods; but the committee is definitely of opinion that this assumption cannot be made, and here it finds itself in agreement with the health authorities of all other countries who have devoted attention to the use of preservatives in food. The report concludes as follows:

"We have given careful consideration to trade interests in so far as they are compatible with or in furtherance of the interest of the consumer. It appears possible that a section of the trade might benefit financially by the treatment of chilled beef with formaldehyde, but we think that the true interests of the trade as a whole would not be furthered by a revival of the practice. There appears to be much in the statement that the treatment of beef with formaldehyde may correct, in part at any rate, improper and defective methods of preparation, handling, storage and transport, but it is undesirable that preservatives generally should be used to support the perpetuation of bad methods in dealing with foodstuffs. We are satisfied that the consumer will not be prejudiced by our non-interference with existing conditions in the meat trade, and that no ultimate advantage to the consumer would accrue from a revival of the Linley process.

"Having regard to all the information which has been given to us, we are of opinion that no exception in favour of the Linley process should be made from our general condemnation of the use of formaldehyde in any article of food or drink.

"We therefore recommend that the treatment of meat with formaldehyde or any of its derivatives should be specifically prohibited."

Nova et Vetera.

THE OBSTETRIC CHAIR, AN ANCIENT MECHANICAL APPLIANCE.

THE recent find by Mr. C. J. S. Thompson, the curator of the Wellcome Historical Medical Museum, of an example of a Hippocratic luxation table[1] is indeed a very valuable and important addition to that collection. The Hippocratic physicians were undoubtedly dexterous in the application of mechanical principles in the treatment of disease, and many of their devices have hardly been improved upon, a fact which reflects high credit on those whose anatomical knowledge was so limited.

One of the most interesting contrivances of the ancients was the obstetric chair (*δίφρον μαιωτικόν*), a convenience which was in use for many centuries, but now seems to have fallen into complete desuetude. Our earliest knowledge of obstetrical science is derived from certain treatises in the Hippocratic collection. Amongst these are those on diseases of women, on superfoetation, on excision of the foetus, on birth, and a few others wherein are contained numerous valuable and painstaking observations on the general practice of midwifery.

In early times pregnant women were usually attended by a midwife, and physicians were only consulted in difficult cases; later, however, they were often called in to conduct normal cases. It will be recalled that the mother of Socrates, Phaenarete, was herself a midwife, from which circumstance her famous son has drawn one of his ingenious illustrations. After Hippocrates, Diocles of Carystus (*c.* 350 B.C.) and Herophilus (*c.* 300 B.C.), the celebrated Alexandrian anatomist, both published works on this subject; none of their writings, however, have come down to us.

We are fortunate in possessing several writings of one of the greatest physicians of all time, and an outstanding exponent of midwifery, gynaecology, and diseases of infants—the illustrious Soranus of Ephesus, who lived during the reigns of the Emperors Trajan and Hadrian (98-138 A.D.), and was following his profession in Rome about 100 A.D. His two books on the diseases of women are a storehouse of interesting facts on the practice of midwifery and pediatrics in ancient times. All our detailed knowledge of these subjects is derived from his works, and here we find every topic discussed in a methodical and systematic manner. Although nominally Soranus belonged to the sect of the Methodists his practice was almost certainly eclectic, combining the best in the teachings of the numerous medical sects of the time. Before giving his account of the construction and use of the obstetric chair I will briefly mention the preparations that were then thought necessary for a confinement. The following are to be prepared for use: Olive oil for lubricating the passages, warm water for cleansing the parts, sweet-smelling perfumes for easing the pain, sponges, wool, a pillow for the child, and a binder, an obstetric chair, two couches—one for the mother and the other for the child.

In the twenty-first chapter of the first book we have the following:

"The obstetric chair is required to put the patient in the proper posture for delivery. In construction it is a chair having in the centre of the seat, where the birth takes place, a moderately large space cut out, round in shape. This space must not be too wide, so as to allow the hips of the patient to slip through, nor again too narrow, so as to cramp the perineal region, which in the state of the patient would be painful. It had better be wide, however, than narrow; for if too wide the opening may be lined with cloth and made the proper size. The chair should be broad enough to accommodate stouter patients, and it should be above the average height since in the case of smaller women the deficit can be made good with a footstool. Underneath the seat the chair should be boarded in on the right and left sides, but the front and rear should be left open for the purpose of the delivery, to be detailed hereafter. There should also be affixed to the seat on the right and left sides two arm rests, for the patient to grasp, during the pains, and in the rear a sloping support to prevent the loins and hips slipping back. This back rest is necessary, because if the midwife were assisting parturition from the rear, and the patient were to lean back, the direct delivery of the child would be hindered by the unnatural position. Another contrivance which some utilize is an axle, arranged under the chair and protruding

[1] BRITISH MEDICAL JOURNAL, February 23rd, 1924, p. 333.

on either side, fitted with a handle and a knob. The purpose of this is that, in the delivery, a noose may be slipped over the ears to the shoulders, or some other part of the child, the ends of the cords made fast to the knob, and the delivery effected by windlass action. But those who use this contrivance do not understand the common rule of obstetrics, that difficult labour should take place when the patient is in a recumbent posture.

"The obstetric chair, then, should be of the above construction as we have described."

Such is the description of the obstetric chair, which appears to have been frequently used from the notices of it in the literature.

An obstetric case was probably conducted as follows:

There were three attendants in addition to the midwife or obstetrician; two of these took up their positions on either side of the patient and the third in the rear. They assisted the woman during the pains, and generally exhorted her to endure them steadfastly. The parturient woman lay down on the couch on her back, and her pains were eased by vaporizing aromatics. Some physicians during this stage allowed the patient to walk about and take nourishment; others forbade it, asserting that it lessened the strength of the patient and exposed the body to the cold. As the patient lay on the couch the midwife determined the progress of the case by making a vaginal examination. When the os was sufficiently dilated the patient was then transferred to the obstetric chair, where the labour was completed. If the patient was of a weak constitution, or if an obstetric chair was not at hand, the labour was then allowed to proceed to its termination on the couch, with this modification, however, that the final stages were completed in a squatting posture. When the patient was placed on the chair her garments and hair were loosened, and the midwife took up her position on a low stool, hiding as much as possible her countenance from the patient, to gain her confidence. The parts were then lubricated with a little warm oil, and the woman was directed to bear down and direct all her strength to expelling the child, especially when the pains occurred. The anal region was kept clean with a small linen towel. If the membranes were not ruptured this was to be accomplished with the finger-nail. When the child was born it was received by the midwife on a napkin, then if the placenta was slow in coming away the cord was cut and it was manually removed. When the birth was completed the parts were then sponged, the patient was transferred from the obstetric chair to a couch, a napkin was applied to the pudenda, and a binder was applied around the abdomen. Little food was allowed for two days, on the third day easily digested foods of all kinds, and on the seventh the patient was allowed to rise.

Normal cases were conducted in this manner throughout antiquity, and although Galen has several references to obstetrics in some of his writings, it is probable that most if not all of his knowledge was derived from Soranus. This work of Soranus was translated into Latin perhaps about the sixth century, and thus this great tradition was handed on to the West.

But the most interesting phenomenon in the history of obstetrics is the discontinuance of what is probably the natural mode of delivery, a mode which the ancients endeavoured to assist by means of the obstetric chair.

Belfast. SAMUEL SIMMS, M.D.

ROYAL MEDICAL BENEVOLENT FUND.

At the last meeting of the Committee thirty cases were considered and £508 10s. voted to twenty-nine applicants. The following is a summary of some of the cases relieved.

Widow, aged 64, of L.F.P.S.Glas. (1896) who, when he died in 1902, left her unprovided for. She had help from a married daughter, who is now dead and her husband also. The applicant is left without means, but with a grandchild. Voted £26.

Daughter, aged 64, of M.R.C.S.Eng. who died in 1859. The family managed to live comfortably until the war. Most of their funds were invested in Russia and have been lost. Since then the applicant has earned an average of about £14 a year by needlework. She receives from investments £26, from a private charity £25, and from a friend £20. She lives at a ladies' home and pays £56 a year. Voted £18 in twelve instalments.

Widow, aged 47, of L.S.A.Lond. who died in April, 1924. There are two children—a daughter aged 18 and a boy aged 16, both at school. The applicant expects, when all her affairs are settled, to have about £500 left. Proposes to take one or two paying guests. Present rent £75 a year. Voted £10.

Widow, aged 48, of M.B.Aberd. (1895) who served in R.A.M.C.(T.) and in the Royal Air Force. He died on May 7th, 1924, leaving eight children aged 10 to 25 years. The eldest son is a medical student. Voted £20.

Subscriptions may be sent to the honorary treasurer, Sir Charters Symonds, K.B.E., M.S., at 11, Chandos Street, Cavendish Square, London, W.1.

THE BRITISH ASSOCIATION IN TORONTO.

WORK OF THE SECTIONS.

THE inaugural meeting, at which the President, Major-General Sir David Bruce, F.R.S., delivered his address to the Association—an account of which was published last week (p. 239)—was held in the Convocation Hall of the University of Toronto. The delegates were formally received by the Premier and other members of the Ontario Government, in the Parliament building, on August 6th. The Council of the Association ratified the appointment of Professor Horace Lamb, D.Sc., F.R.S., late professor of mathematics at Manchester University, as President for 1925. Next year's meeting will be held in Southampton.

On August 7th the Association separated into its thirteen sections, for each of which suitable accommodation was provided in the Toronto University buildings, all being close to the central reception room. The address by Dr. H. H. Dale, the president of the Physiological Section, was printed in our last issue (p. 219).

Health and Physique.

The president of the Section of Anthropology, Dr. F. C. SHRUBSALL, dealt with health and physique through the centuries. Complaints about physical deterioration of the population were ancient, dating back to Egyptian times. The report of the Ministry of National Service on the findings of the recruiting boards during the last years of the war had caused alarm with regard to the position in England, but this survey had been undertaken when most of the physically fit had already enlisted voluntarily. A record obtained in 1918 was probably more indicative of the actual state of the nation. Of about 170,000 youths, aged 18, 65 per cent. were placed in Grade I, 30 per cent. in Grades II and III, and 5 per cent. in Grade IV. The recent war appeared to have left no obviously harmful marks on the population; the children were well nourished, and the anticipated increase of defective children had not materialized, even in air-raid areas. The increase in the number of children who were troublesome and educationally backward was not due to innate defects of character, but rather to lack of discipline during the absence of their fathers. Dr. Shrubsall held that a pessimistic view of the physical and mental condition of the people in England was unjustified; there was no decrease in stature or weight, and the recent war had shown the existence of powers of resistance to physical adversity that had never been equalled hitherto. Education, so far as children were concerned, was now more general, the national health had improved, and the expectation of life was longer than ever before. There was no reason to think that the physical conditions of any class of the population were worse than those of corresponding classes at previous epochs, even in those classes on which industrialism and city life had pressed most hardly. The real increase in proportion of the unfit was much less than had been assumed; reproductive selection, which tended to increase the apparently less valuable stocks, was opposed by a lethal selection, which had a contrary trend. From the eugenic standpoint emigration, though a real disadvantage to England, had been a source of strength to the empire of associated nations. The evils of industrialism were being successfully opposed by a higher level of general culture and the awakening of a national conscience. A still greater influence for good was the more intelligent care of children, in which the application of preventive medicine was playing an important part. The intellectual average of the nation was equal to that of any other country. Civilization might be making greater demands of its bearers, but their qualities were neither diminishing nor deteriorating, and increasing numbers were being fitted to shoulder the burden. The younger countries could profit by the experience of the older and provide from the start better hygiene and more effective education. They could watch over the most favourable racial elements, establish a public opinion favouring the early segregation of degenerate types, and, as Canada was doing, could limit emigration to those likely to become fit citizens.

The Scope of Psychology.

In the afternoon of August 8th Professor W. MCDOUGALL delivered the presidential address to the Section of Psychology on purposive striving as a fundamental category of psychology. He remarked that the success of the Psychological Section might be taken as evidence of the recognition of the claim of psychology to form a branch of natural science. Among psychologists there were some differences of opinion as to the scope of their science: some defined psychology as the science of consciousness, confining themselves to the analytic description of

states of consciousness as complex conjunctions of units; others, on the contrary, introduced into the study of mind only those methods of observation, description, and explanation which were used in the physical sciences, and practically confined themselves to the study with the unfortunate name "behaviourism." Professor McDougall believed that neither of these two lines satisfied the majority, and he urged the adoption without reserve of the conception of purposive striving as being "valid, useful, nay indispensable, and therefore true." The life of man was one long series of such strivings, and we now realized, thanks to Freud, that this striving continued in dreams—the end in view governing the activities of both mind and body. This striving had to be considered at every stage of psychological investigation: when it had been ignored the "will" could not be introduced into the picture as the finishing touch. In physiology the mechanistic confidence of the nineteenth century was fading away as the complexity of the living organism was more fully realized. So, also, in general biology the mechanistic neo-Darwinism was helpless before the problems of evolution, the origin of variations, the differentiation and specialization of instincts, the increasing part played by intelligent adaptation, and the combination of persistency of type with indefinite plasticity, which was analogous with the steadfast, purposive, adaptive striving of a resolute personality. Such considerations, he added, should encourage them to claim for psychology the freedom to choose, shape, and refine its own fundamental conceptions, instead of accepting the abstract conceptions of physical science and attempting to build up from them a mechanical dummy. Let them begin by accepting man for what he seemed to be—a thinking being, who strove to attain desired ends and to realize ideals. Psychologists should endeavour to understand the history of these tendencies to strive; as they progressed with this task they might cautiously extend the same principles of explanation to the animals of successively lower levels, and then, perhaps, they might be able to begin to understand the broader aspects of the physiology of a complex organism.

On August 9th, in the morning, a joint discussion of the Psychological and Physiological Sections was arranged, and dealt with the physiological and psychological factors of muscular efficiency in industry. Professor C. Lovatt Evans read a paper on the physiology of muscular contraction in relation to fatigue, and Professor E. A. Bott dealt with the co-ordinate volitional action of antagonistic muscular groups. Professor E. P. Cathcart discussed the calculation of the mechanical efficiency of the performance of muscle work. Dr. C. S. Myers spoke on conceptions of fatigue, and Professor S. F. Lee contributed an account of the physiological aspects of efficiency in industry.

On August 9th and 10th a considerable number of excursions were arranged. The Engineering Section inspected the great hydro-electric installation in the Niagara district under the Ontario Power Commission, visited the new Welland Ship Canal, and made a motor car tour of the Niagara fruit district. The Geological Section explored the glacial formations in the Niagara region, and the Chemistry Section studied industrial plants in the Niagara peninsula. The Physiological Section inspected the Ontario Mental Hospital at Whitby.

Biochemistry.

On August 11th the Physiology and Chemistry Sections united in a discussion on vitamins and the relation of light to their action. Professor J. C. Drummond outlined the modern tendencies of vitamin research, and Professor H. C. Sherman dealt with the quantitative distribution and nutritional significance of fat-soluble vitamin. The isolation of a bios from autolysed yeast was described by Professor Walter H. Eddy, and fractionation of bios was considered by Professor W. Lash Miller. Professor W. Steenbock called attention to radiant energy as the antirachitic factor. In the afternoon the Physiology Section considered the unsaturated fatty acids in metabolism, which subject was introduced by Professor W. R. Bloor. Dr. D. D. Van Slyke spoke on the distribution of electrolytes in the blood. Professor H. E. Roaf contributed some observations on urinary pigments, and Dr. E. Gordon Young dealt with the decomposition of glucose by bacterial enzymes.

On August 12th Professor J. J. R. Macleod described experiments he had been making with a view to elucidating the nature of the chemical change that accompanies the disappearance of blood sugar in normal animals under the influence of insulin. Mr. C. H. Best, dealing with the question of the dosage of insulin, had confirmed the findings of other investigators that a small dose (10 units) exerted as rapid and nearly as prolonged an effect upon the blood sugar of a normal dog as a dose ten times the size. It seemed, therefore, that insulin acted as a cell stimulus rather than in bulk as a chemical. A paper by Drs. P. J. Moloney and D. M. Findlay was concerned with the properties and purification of insulin, with especial reference to the application of the authors' procedure of adsorption as a method of purification, and the trial of some new precipitating agents for insulin. Professor A. T. Cameron, speaking on the effect of the absorbable intestinal toxins on metabolism, reported that an artificial filtrate of these toxins had been shown experimentally to produce distinct chloride retention in dogs and a rhythmic effect on total nitrogen and urea excretion (a fall followed by a greater rise) which could be repeated by increasing the injection dose.

Race and Mind.

Professor W. McDougall opened a joint discussion by the Sections of Anthropology and Psychology on the existence of mental racial differences. The majority of psychologists, he said, probably took the view that such differences did not exist; experimental psychology had, however, reached two well founded conclusions. First, the Cambridge anthropological expedition in 1899 to the Malaya Archipelago had shown that two of the coloured races, the Oceanic negro and the Malayo-Polynesian, differed in their sensory capacities from the white races so little as to afford no basis for the explanation of their cultural difference. This conclusion had later been confirmed, and it might be taken as established that all branches of the human race possessed practically equal sensory capacities. Secondly, methods of intelligence testing showed, however, that there were definite racial differences in the innate capacity to develop general intelligence, and the negro had, on the average, a definitely lower endowment than the white race. With regard to the existence of more specific racial differences, two views were held by psychologists: the first, based on the psycho-analytic methods, was that there were symbolic methods of thinking common to men of all races, and thus each race had a racial or collective "unconscious," which influenced its culture, religion, and philosophy. The most serious objection to this view was that it implied the reality of Lamarckian transmission, but this was not insuperable. Professor McDougall held the more conservative view that the various races differed in the relative strengths of instinctive tendencies. In one race the pugnacious tendency was very strong, in another weak, and similar differences existed in the strength of the other instincts. Such differences were reflected in their cultures and institutions, and the comparative study of these threw light on racial differences. Both schools of thought recognized that just as there were great individual differences amongst persons of the same race in respect of special mental capacities, so probably there were similar innate differences in these respects between different races.

Nerve Injury and Deformity.

Dr. Ivy McKenzie in the afternoon read a paper on orthopaedic deformity and the dissolution of central nervous integration. In the upper limb gunshot wounds in the musculo-spiral segment were rarely followed by serious sequelae, in contradistinction to wounds in the ulnar segment, and operations on the ulnar nerve were less successful than those on the musculo-spiral. A wound in the musculo-spiral segment might give rise to a deformity in the ulnar segment, but a wound in the ulnar segment never gave rise to deformity in the musculo-spiral segment. The explanation of these differences was that the lowest segment (first thoracic) contained central neurones of the sympathetic system which were absent from the upper segment. The lowest segment contained also motor neurones and terminal sensory neurones of the ulnar nerve, which is concerned with the finer movements of the hand. This explained the tendency to orthopaedic deformity in the ulnar segment of the limb as the result of dissolution of the central nervous integration in the cord.

Colour Blindness.

Professor H. E. Roaf reported that as the result of examining colour-blind persons it had been found that some were sensitive to as great an extent of the spectrum, and apparently with equal intensity, as was the case with normal people. It followed, therefore, that their colour-blindness was due to failure to differentiate certain wave-lengths. These patients recognized their mistakes when they viewed their colour matches through a colour screen. He suggested that possibly the wearing of a coloured eyeglass over one eye would enable such a patient to recognize colours like a normal person.

Renal Hypertrophy.

A paper contributed jointly by Professors L. B. Mendel, T. B. Osborne, E. A. Park, and Dr. M. C. Winternitz dealt with the influence on the kidney of dietary factors. The general belief that a high protein diet produced renal irritation was tested by observing the changes produced in rats fed on rations extremely rich in protein. The kidneys became strikingly hypertrophied, but no inflammatory or degenerative changes were found by histological examination, nor was there any hypertrophy in the heart. When the renal function was greatly augmented by certain causes other than the task of eliminating nitrogenous waste, hypertrophy did not develop in the same way.

INTERNATIONAL DENTAL FEDERATION.

The seventeenth annual meeting of the International Dental Federation was held this year in the city of Luxemburg, on August 3rd, 4th, and 5th. The Town Hall was placed at the disposal of the Federation by the municipality, and the Mayor received the members in the council chamber.

At the opening meeting the Director-General of Education in Luxemburg (Herr Nevens) presided in the absence of His Excellency Emile Reuter, the Prime Minister. He was supported by the Marquis de Brichanteau, Italian Ambassador to Luxemburg, Dr. Weber, President of the Society of Medical Sciences, Dr. Forman, representing the Medical College, Dr. Krombach, President of the Union of Folk and School Hygiene.

M. Aloyse Decker of Luxemburg introduced the Federation in a short speech, and Herr Nevens, on behalf of the Prime Minister, read an address in French, which expressed the Government of the Grand Duchy's high appreciation of the considerable progress made in recent years in odontological science and its gratification at the honour of the visit of the International Dental Federation.

Speeches were afterwards delivered by the dental representatives of various countries, commencing with that of France by M. A. Blatter (Paris), followed by Dr. Schäeffer-Stuckert (Frankfort, Germany), Dr. H. Friesell (Pittsburg, U.S.A.), Dr. G. Baudoux (Brussels), M. Griepeschoek (Riga), Mr. W. B. Paterson (London). The last-named speaker, remarking upon the reappearance of a more fraternal spirit among the dentists of Europe, as exhibited by their delegates' speeches, expressed the opinion that such a manifestation of solidarity would result in a success for the next International Dental Congress, which is to be held in Philadelphia, U.S.A., in 1926. He expressed the regret of British dentists that the International Congress, prepared for with great labour and care in London in 1914, had been ruined at the last moment by the commencement of the great war.

Dr. Truman W. Brophy (Chicago), President of the International Dental Federation, having thanked the Government representative and the various speakers, the meeting adjourned for the consideration of the various matters of the programme by the several commissioners appointed.

The Hygiene Commission reported its opinion that, in view of the prevalence of dental caries in all civilized countries throughout the world, and the dangers to public health resulting therefrom, a dental department ought to be established in every Ministry of Health, to be under the control of a dental director. The Documentation Commission reported that it had established in the Palais Mondial, Brussels, a catalogue of all the important works and papers on dental subjects published during the past seventeen years. The cataloguing was done on the latest and most approved system, both as regards title of subject and the name of author. Dentists and others were now able to obtain copies of papers, etc., at a nominal fee, by writing to the Director of the Palais Mondial, or references to subjects or authors would be sent for the cost of postage. A curious incident in connexion with cataloguing was the publication weekly of a Russian journal of references to books, papers, and other dental communications published all over the world, at the expense of the Soviet Government of Russia. No such elaborate work was published by any other nation or by any other Government. The Palais Mondial had received a copy weekly from Russia during the past two years.

The Miller Memorial Prize, awarded by the International Dental Federation every two years for important work done in connexion with dental science or for dentists, was awarded to Dr. Truman W. Brophy, Dean of the Dental School of Chicago. Mr. J. Howard Mummery (London), on behalf of the Federation, announced the award and congratulated the recipient.

Various matters of organization connected with the forthcoming International Dental Congress in Philadelphia in 1926 were brought before the Federation by Dr. King (Chicago), the General Secretary of the Congress, and were replied to by Dr. W. Guy, Dean of the Edinburgh Dental School, Professor Gilmour of Liverpool University, and Dr. G. Villain (Paris).

The fund organized by the Federation for the relief of distress among Russian dentists in 1923 was reported upon by Dr. Florestan Aguilar (Madrid), who with Dr. Georges Villain (Paris) acted as honorary secretaries in the collection and distribution. Over 260 complete sets of dental instruments were distributed, each set consisting of a small and compact dental engine, instruments and materials for tooth stoppings, and extraction forceps. Dr. Aguilar and his wife obtained passports from the Soviet Government and visited Petrograd (Leningrad), Moscow, and Odessa for the purposes of investigation and distribution. A cordial vote of thanks was passed by the Federation to Dr. and Madame Aguilar for their courageous and noble actions.

The business proceedings of the Federation in Luxemburg terminated with a banquet at the casino, or chief club of the city. The next meeting of the International Dental Federation was fixed to take place in Geneva on August 5th and the following days, 1925.

India.

Public Health in Bombay.

The Public Health Department of the Bombay municipality has prepared for the information of the public a pamphlet in English, Gujrathi, and Marathi, dealing with the precautions to be taken against seasonal sicknesses. The various preventive measures are detailed, and certain diseases, such as influenza and plague, are dealt with at length. A list of the municipal dispensaries where medical relief can be obtained, and where applications for admission to hospitals can be received, is given, and a note of the several institutions, such as maternity homes, infant welfare centres, tuberculosis and other dispensaries, is included. Information with regard to the administrative procedure concerned in health and diseases generally is duly set forth, and a list of the health department offices and vaccine stations in the city is appended.

South Indian Branch.

The second number of vol. xvii of the *Transactions of the South Indian Branch* of the British Medical Association contains three papers read before the Branch. In the first, Lieut.-Colonel F. F. Elwes dealt with the ancient history of medicine, with special reference to Greece and India. He pointed to the apparent similarity between the beginnings of medicine in Egypt, Greece, and India; in each country the origin was supposed to be divine, and in each, in the course of time, the original promulgators were deified. The subsequent growth and development of medicine differed considerably—in Egypt medical knowledge progressed slowly for a few centuries and then became stationary; in India little progress was made; but in Greece medical knowledge advanced, and it was from Greece that modern medicine derived its origin. Aesculapian temples, like the early Egyptian temples, were not confined to worship, but served also the purpose of treating the sick and maimed, and might be considered the prototypes of modern hospitals, sanatoriums, and medical schools. Whether the Hindus influenced Greek medicine before the time of Alexander the Great or were themselves influenced by it, the Hindu physicians and surgeons of this period had a well deserved reputation for skill, and the ancient humoral pathology, closely allied to the doctrine of Hippocrates, survives in India in the present day. The Chinese ancient system of medicine was characterized by reverence for authority, but was encumbered by excess of detail and many inaccuracies. He concluded that "we owe to the Babylonians specialization in the matter of fees, to the Jews medical jurisprudence and hygiene, to the Hindus skill in operative surgery, and to the Greeks the ethics and scientific foundation of the theoretical and practical medicine of modern times." The second article, by Major W. L. Forsyth, is a review of infantile biliary cirrhosis of the liver in India. After discussing the history of the disease since it was first described in 1881, he defined it in the terms of Gibbons (1891) as being a cirrhosis of the liver of infants and very young children, chiefly of the Hindu community, essentially biliary in type, but showing also intralobular fibrosis and symptoms of varying degree of portal cirrhosis. He suggested that it was due to irritation following the excessive eating of chillies and curries, and that there was intrauterine poisoning of the embryonic liver by a toxin in the maternal blood, which later continued to be given to the child at the breast. Dr. I. Frost, professor of biochemistry at the Medical College, Madras, dealt with old and new ideas in biochemistry, and remarked that the modern outlook was more concerned with physical state than with chemical composition. In the living creature one state of matter was so subdivided or dispersed through another state that a maximum of effective surface was

developed for a minimum volume. Such a state of subdivision was called the "colloid" state, and there arose thence a conception of a surface which might be broadly defined as the boundary between two phases, and as the seat of special forces—mechanical and electrical. He concluded by considering the phenomena of surface tension, surface contraction, and adsorption.

CHOLERA IN BIHAR AND ORISSA.

The cholera epidemic which had obtained so strong a hold in April in Bihar and Orissa has since been kept in check. Preventive measures, which were carried out on a very extensive scale, included the disinfection of wells and other water supplies, and the clothing of the sick. Routine treatment with kaolin and potassium permanganate was instituted with very satisfactory results. At the beginning of June there was a marked decrease in the mortality throughout the epidemic area, due in some degree to the heat and unusual dryness of the weather during the previous two weeks. Close co-operation between the public health officials and civil surgeons and the district boards was maintained.

KALA-AZAR COMMISSION.

The Kala-azar Commission recently appointed by the Government of India is composed of Lieut.-Colonel Christophers, Major Shortt, and Mr. Barraud, and is being financed by the Government of India, the India Research Fund Association, and by grants from the Governments of Assam, Bengal, Madras, Bihar and Orissa, and the Upper Provinces. In the first instance, the inquiry will be focused on the method of transmission of this disease in nature, and preparatory work is being performed to enable the Commission as a whole to make a full start in October. An intensive epidemiological study of certain selected kala-azar localities is being arranged, and it is intended that the inquiries should synchronize in all areas with the period of active transmission of the disease. A complete collection and examination of all biting insects found in association with the disease will be made, and experimental laboratory work will be organized, dealing with parasitic and allied flagellates, with a view to obtaining clues to the life-history of Leishmania outside the body. The geographical distribution of the disease throughout the world, as well as in India, will be accurately ascertained.

AMBULANCE AND HYGIENE TRAINING.

The annual general meeting of the St. John Ambulance Association and the Indian Red Cross Society was held on June 24th, with the Viceroy in the chair. The annual report of the St. John Ambulance Association stated that 750 courses of instruction in first aid, home nursing, and home hygiene had been held during the previous year, at which 12,712 persons had attended. The percentage of passes obtained in the subsequent examinations was 63, as compared with 56 in the previous year, and 61 in 1921. Seven new centres had been opened during the year, and an increasingly active interest was being taken by the police and the railway employees. The Indian States continued to support this training, and classes were held at thirteen stations in different States. The total number of certificates and other awards issued by the Indian Council since 1911 was over 100,000. All-India ambulance competitions were held during the year at Allahabad and Calcutta, and a challenge shield will be presented by Lord Reading for such meetings in the future. The report of the Indian Red Cross Society contained a reference to its useful work in providing simple health booklets and leaflets in several languages, coloured posters, and lantern slides. Many centres had been provided with this literature, and in certain provinces it was being freely used by Government health officers. The increase in child welfare centres was being somewhat retarded by the lack of suitably trained Indian welfare nurses. More training schools for nurses were urgently needed, and it was hoped that within the next few years every town would possess at least one welfare centre and one trained health nurse.

THE ANGLO-INDIAN TYPE.

A statistical analysis by Professor Mahalanobis on stature measurements made by Dr. Annandale, the director of the Zoological Survey of India, of a group of 200 Anglo-Indians of Calcutta, has been published in the Records of the Indian Museum (vol. xxiii). The Anglo-Indians examined were the offspring of European and Indian parents. Professor Mahalanobis's conclusions are that, while Indian castes and tribes are significantly less variable in stature than the average, the Anglo-Indian variability is greater than Indian caste variability, but is of the same order as the variability of modern European races. This variability, however, though greater than the average, is not beyond the range of possibility of homogeneous variability, and shows a tendency to increasing homogeneity in the younger generation. In other words, we gather that the Anglo-Indian of Calcutta, the product of the last 200 years, is becoming a homogeneous anthropological type. Growth in this race is somewhat precocious, and arrest of growth appears to occur at an earlier age than amongst European races. Professor Mahalanobis is engaged, we understand, in analysing observations on the other anthropological characters recorded amongst the group of 200 Anglo-Indians measured by Dr. Annandale.

Scotland.

THE BRITISH DENTAL ASSOCIATION MEETING.

THE forty-fourth annual general meeting of the British Dental Association was held lately in Edinburgh. The Lord Provost, Sir W. L. Sleigh, who was accompanied by a number of the magistrates, in extending a welcome on July 29th said that the visit of such an association to Edinburgh made a powerful appeal, for the city recognized the importance of the dental profession and the great influence that it exercised in public health affairs. At the opening of the first session, Mr. Campion, the retiring president, delivered his retiring address, and Mr. John S. Amoore, the new president, was called to the chair. He pointed out that dentists formed now a body of men not concerned only with craftsmanship; they tried to probe the secrets of the development, nutrition, and well-being of the human body to discover the causes of the incidence of dental decay. A great change had come over both medical and lay opinion in regard to the teeth and their relation to general health. Up to the early eighties of last century, if there was no pain and no active suppuration present, many roots which would be unhesitatingly condemned to-day were allowed to remain in the mouth, and these were often very skilfully joined up by mechanical means, though undoubtedly to the prejudice of the patient. Some thought that the pendulum had now swung too far, and that mouths were often cleared of teeth without benefit resulting to the patient, who was thereby left worse off than before; very few dentists would wish to argue that substitutes were as good and efficient as the original teeth. The development and calcification of the teeth should be considered before birth, during lactation, and infancy, for few would not maintain the advantage of having well-formed jaws and well-calcified teeth at the beginning of life. If expectant mothers received well arranged diets in which green vegetables and milk were abundantly supplied and cereal foods well balanced by substances containing vitamin A, a good beginning would be made. If the mother and the child could live more in direct sunlight it would go far to promote a healthier condition and to balance the many agents which, combined in their right proportions, produced a healthy body. They were all now agreed on the necessity for everyone, but especially for children, of good hard food—not bread soaked in milk, which was once considered ideal—but crisp bread, bread twiced baked and crisp toast, which not only acted as a detergent and cleaned the teeth, but promoted the flow of normal saliva. Dr. Ralph A. Broderick, in a paper on dental bacteriology, suggested that a swab taken carefully from the root canal of a doubtful tooth would help to

clear up the question of treatment, and smears from a case of gingivitis would clinch a diagnosis of Vincent's angina. Mr. H. W. P. Bennette declared that many collar crowns had been fixed in the mouth which should never have been applied. The whole history of collar crown work as he had seen it was resonant with the one word—failure. The history from the patient's point of view had often been good in spite of badly fitting crowns and not because of them. Very often when they removed a crown it gave off an abominable odour; they might be quite confident that in such a case, even if the patient had been unaware of any trouble, evils had been hatching which his bodily power of resistance had had to fight against. He had reached this conclusion, that if so much tooth had been lost that he could not restore it by some other means than by collar crowns he condemned it to extraction; he advised some of the younger members to seek some other form of restoration than collar crowns and bridges which necessitated these. The medical profession was condemning crowns wholesale and laying the blame for many ills of patients on these "gilded sepulchres."

Sir Leslie Mackenzie, of the Scottish Board of Health, in an address on "Dental hygiene and a public dental service," said that during the last thirty years following the report of the Scottish Royal Commission on Physical Training he had had a personal share in inducing the public authorities to provide dental treatment for school children. Dr. Lewis Cruickshank had collated the facts about defective teeth in children of 5 years of age. The percentage showing decayed teeth at that age was enormous, for at least 57,000 children began school life in Scotland every year with their teeth in a defective condition, and of these 20,000 had more than five teeth in a state of decay. In the Report of the Scottish Board of Health for 1923 it had been stated that of the school children examined in that year 52.3 per cent. had from one to four teeth, and 13.3 per cent. had five teeth or more, in a decayed state—a total of 65.6 per cent. The speaker emphasized the question of nutrition in relation to the teeth, and said that the tooth was not an isolated structure, but at every stage of growth shared like other tissues in the general nutrition: the problem of the teeth was therefore only one among the many problems of nutrition and growth. Mellanby had shown that the structure and arrangement of the teeth of animals depended largely on their nutrition during the period of development: the teeth were valuable indicators of general nutrition. It was well known that the nails showed the strain-history of the previous four or five months, and it was probable that the teeth showed similar changes. A shrewd guess could often be made at the period of the occurrence of some serious illness by observing the part of the enamel of the teeth which was affected. The administrative problem facing a public dental service could now be stated in general terms. It must be related to the work of general medicine; it must also take account of pre-natal nutrition of the child and of the nutrition during lactation, including the care of the nursing mother. If these basic problems were well tackled a dental service could work marvels for the community within a few years. The lecturer described the condition of the teeth of children in the Western Islands, where the percentage of children with all the teeth sound was about 77, and in some schools it was as much as 90. A prominent feature was the rarity of rickets and bad teeth among the younger children. It was worth investigation whether the children benefited by an increased intake of iodine, calcium, and other essentials for good growth. The children in industrial centres certainly consumed more sugar and had less access to wholesome vegetables. An effective Dental Board had now been established; the internal difficulties of the dental profession had been provisionally solved and would ultimately disappear as similar difficulties had disappeared in the medical profession. The technical standard of dental education would continue to rise. A public dental service was effectively growing up, and when they had utilized the resources of the existing services to the full, the next step would reveal itself. A paper by Mr. H. Alvin Mahony upon some economic aspects of public dental service called attention to the gap which existed for the majority of people requiring dental treatment between the treatment at school clinics and the time when the dental treatment from approved societies became available.

Central Midwives Board for Scotland.

The examination of the Board held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, has just concluded with the following results: Out of 127 candidates 117 passed. Of the successful candidates 31 were trained at the Royal Maternity Hospital, Edinburgh, 43 at the Royal Maternity Hospital, Glasgow, 3 at the Maternity Hospital, Aberdeen, 9 at the Maternity Hospital, Dundee, 9 at the Queen Victoria Jubilee Institute, Edinburgh, 6 at the Cottage Nurses Training Home, Govan, Glasgow, and the remainder at other recognized institutions.

Edinburgh Royal Infirmary Appointments.

At a meeting of the managers of Edinburgh Royal Infirmary on August 4th Mr. J. W. Struthers, F.R.C.S.Edin., was appointed to the office of ordinary surgeon in charge of wards, to fill the vacancy caused by the resignation of Mr. J. W. Dowden, who has been invited to become a consulting surgeon. Dr. Logan Turner, who was surgeon to the ear, nose, and throat department from 1906 to 1921, and who subsequently acted as surgeon consultant for three years, retired on August 5th, and has been invited to accept the office of honorary consulting surgeon. Dr. R. Cranston Low was appointed one of the physicians for diseases of the skin from October next, when Sir Norman Walker will complete his term of service; the latter, however, will continue as extra physician for lupus and sunlight treatment cases. It was reported that 1,536 patients had been treated in hospital during the previous two weeks, and that the number of cases awaiting admission to the institution on August 1st was 1,786.

Royal College of Surgeons of Edinburgh: F.R.C.S. Examination.

The following is the text of the papers set in the subjects specified at the recent examination for the diploma of F.R.C.S.Edin. All the questions in both papers were to be answered.

Surgery and Surgical Anatomy.

1. Discuss the differential diagnosis of a unilateral congenital dislocation of the hip in a child aged 2. How will you treat the condition? Indicate the prognosis.
2. Mention the causes of hydronephrosis, and indicate how you will determine the cause in a given case. What methods of treatment are employed for hydronephrosis? Indicate the factors that will guide you in selecting each of these methods.
3. What do you understand by an hour-glass constriction of the stomach? Discuss its etiology. How is the condition diagnosed, and what fallacies must be guarded against in arriving at a diagnosis? Describe the operative treatment of a well marked case.
4. What symptoms would lead you to suspect an extrinsic carcinoma of the larynx? How would you verify this diagnosis? Describe an operation for complete removal of the larynx.

Surgical Pathology and Operative Surgery.

1. Name the varieties of odontomes and discuss their etiology.
2. What are the non-malignant affections of the œsophagus amenable to surgical interference? Describe the macroscopic and microscopic changes in and about a cicatricial contraction.
3. What are the anatomical factors in spina bifida which determine surgical treatment? Describe an operation for meningomyelocele.
4. Give the morbid anatomy of a tumour of the carotid body, and the surgical anatomy involved in its removal.

Perth Royal Asylum.

The ninety-seventh annual report of James Murray's Royal Asylum shows that the work in this institution is making good progress. The total number of patients under treatment during the year was 212, and the average daily number on the register was 147.2. The number of admissions during the twelve months ending March 31st, 1924, was 61; 34 patients came in as voluntary boarders. In 29 cases a definite history of mental disease or abnormality in a near relative was obtained. In most cases the bodily health was obviously impaired, and, apart from hereditary predisposition and physical ill health, the more important cases of the mental disorder were long-standing alcoholic excess in 11 cases, in 9 cases puberty changes, in 12

climacteric disturbances, in 12 senile decay, and in 9 cases worry and anxiety. In 3 cases there was obvious overaction of the thyroid gland, and in 2 cases insufficiency. In more than 40 cases on admission the condition of the mouth, gums, teeth, and tonsils was unsatisfactory, and treatment of these conditions was made a routine in all new cases. Forty-seven patients were discharged during the year, of whom 24 had recovered, 19 were relieved, and 4 were unimproved. The ratio of recoveries to direct admissions was approximately 43 per cent. During the coming year it is proposed to install a new hot-water system, which will result in a better supply of hot water and a considerable economy.

Royal Blind Asylum, Edinburgh.

A company of about 350 of the blind workers, with their friends, was entertained by the Directors of the Royal Blind Asylum of Edinburgh to celebrate the opening of a new work pavilion. The latter is a large, well lighted hall, having a floor space of about 5,000 sq. ft., and is intended to be used for the making of baskets and other wicker-work. This has been erected, at a cost of £1,800, in connexion with the workshops in Gillespie Crescent, Edinburgh. On the same day the annual prize-giving of the Royal Blind School took place. An interesting exhibition of dancing was given by the pupils after the prize-giving. It was explained that dancing by the blind was experimental, but the dancers were able to keep excellent time and to find their partners again after somewhat intricate measures with wonderful quickness, and the blind clearly enjoyed greatly this part of the proceedings.

England and Wales.

Extension of School Medical Service in London.

The Education Committee of the London County Council has been considering a scheme for the more comprehensive organization of education in its area, and in a recent report to the Council has outlined a programme of educational developments to be introduced in the course of the next few years, on the understanding that each detail of the proposal as it arises will be submitted for approval in the usual manner. Among the proposals is a further extension of the school medical service to make it include the systematic medical examination of children immediately before leaving school, so that advice may be given on questions relating to employment and co-operation may be established between the school medical officer and the factory surgeon. It is also proposed to extend the arrangements for dental treatment and treatment of minor ailments; to make provision for in-treatment of children operated upon for enlarged tonsils and adenoids and children suffering from ear disease; to arrange for the further provision of remedial exercises under special supervision, and increased facilities for the inspection and diagnosis of mentally defective and anaemic and tuberculous children, and for provision for children suffering from epidemic encephalitis. The total additional maintenance cost for medical and care work is estimated to be £18,000 for the first year, rising to £23,200 for the third year in which these schemes are in operation.

Central Midwives Board.

The Central Midwives Board for England and Wales met on July 31st for a special meeting and the ordinary monthly meeting. Sir Francis Champneys presided. Consideration was given to a letter from the Blackburn Branch of the National Association of Midwives asking for the Board's opinion on a communication the Blackburn local supervising authority was sending to midwives regarding the proposed issue annually of a certificate of competence to every midwife practising in the borough who qualified for it, as follows:

"This is to certify that certified midwife No....., Miss or Mrs. ....., practising at....., has carried out her duties, both as regards ante-natal care and midwifery, during the year ended December 31st, 192..., to the entire satisfaction of the Heath Committee."

The M.O.H. for Blackburn had written setting forth the scheme of which the foregoing forms part, and in connexion with the matter a letter had also been received from the M.O.H. of Birmingham. While approving generally the efforts of the Blackburn local supervising authority for the improvement of ante-natal work on the part of midwives, the Board did not think that the granting of a certificate was essential to the success of the scheme. It was agreed, in reply to a letter from the Association of Poor Law Unions, to receive a deputation from its council at the Board's meeting on October 9th.

London Police Orphanage: Medical Equipment.

The annual report of the Metropolitan and City Police Orphanage contains an account of the new war memorial hospital, which was opened by the Prince of Wales last June. It was erected in memory of the 386 Metropolitan and City police officers who died in the war, and will provide medical treatment for the children of the orphanage. All minor ailments and the examination and treatment of ophthalmic defects can now be centralized in the hospital instead of being dealt with in various parts of the orphanage. The new wards and convalescent rooms, as well as the provision of accommodation for isolation of cases of suspected infectious disease, have been needed for a long time. In planning the building special attention was paid to the fact that the number of cases for treatment varied at different times—sometimes requiring the use of the whole building, at other times allowing for closing of much of the ward accommodation; such changes can be dealt with satisfactorily without disturbing the general working of the hospital. The building is fitted with electric light, bells, fire alarms, and fire appliances of the most modern type; the sanitary work and the hospital equipment are fully up to date. The cost of the erection, furnishing, and equipping of this valuable asset of the orphanage was defrayed by a special subscription from all ranks of the Metropolitan and City Police Force.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

Tuberculous Pensioners.

Conference of Authorities.

Dr. W. E. Elliot, on August 7th, raised the question of the treatment of tuberculous ex-service men under the care of the Ministry of Pensions.

The tuberculous man, was, he said, in a peculiar position in that he came to some extent under two Ministries—the Ministry of Health, or the Board of Health in Scotland, and the Ministry of Pensions. The ordinary pensioner was not convinced that when he came under the care of the Ministry of Health he had the same advantages that his fellows enjoyed who were under the sole care of the Ministry of Pensions. There were also other points. He did not believe it was possible to concentrate the tuberculous cases in one or two spots in the United Kingdom. He had already raised the grievance of some men as to the disability grant; a pension of 100 per cent. was granted for six months after first dismissal from a sanatorium, but was not continued at that rate after subsequent admissions and dismissals from the sanatorium. Then a man was boarded solely on the extent of his disability. He did not know what the average length of life of the tuberculous pensioner was, but hoped it was longer than the average length of life of the tuberculous civilian patient. The latter was stated by the medical officer of health for Glasgow to have a duration of life of three years after first dismissal from the sanatorium. Consequently these pensioners were few in number, and Dr. Elliot asked whether it would not be possible to deal with them as special cases. When he brought the matter to the attention of the Ministry of Pensions they said quite rightly it was impossible to mix up the duties of the Ministry of Pensions, which looked after the man in so far as he had been injured by the war, and the duties of the Ministry of Health, which looked after him in so far as he was a peril to the community. That made all the more necessary a close co-ordination between the two departments. He knew of one case of a man with a 40 per cent. disability, and another of a man with an 80 per cent. disability, whose two children had both contracted tuberculosis. He asked what chance there was of such men finding employment. Dr. Elliot went on to press the need for a closer co-ordination between the Ministry of Pensions and the Ministry of Health. The problem of the tuberculous man was a grave one in the community. The necessity for getting him to undergo sanatorium treatment was one of the ways in which they should be able to continue the reduction in the tuberculosis figure which was such a feature of their present health statistics. The Ministry of Pensions had a special respons-

bility to make sure that these men were so treated as to give the impression among the civil population that the tuberculous man should enter hospital for his own good—that he had the best possible chance of having the disease arrested and of making sure that it was not communicated to others.

Mr. Muir (Parliamentary Secretary to the Ministry of Pensions) acknowledged that Dr. Elliot had raised one of the most important questions the department had to consider. A man with a high disability from tuberculosis was debarred from entering into occupation because of the undesirability of his association with other workers. That was admitted at once, but the difficulty was to know what to do with him. It was necessary, if any assistance was to be given by way of curative treatment, that a patient's mind should be free from financial embarrassment, and also that he should feel he was a useful member of the community. It was important to know whether it was better to give a man full maintenance, which would make him independent of any need to earn a livelihood, or whether it would be better to give him the ordinary assessable pension on the same terms as for other disabilities and to try to provide him with useful occupation. The difficulties had been considered by the Ministry of Labour and the Ministry of Pensions in conjunction with the Ministry of Health, and schemes were proposed for setting up communities entirely for tuberculous ex-service men. The trouble was that most of these men were not desirous of entering such a community. On the other hand, a community such as that would probably have to be subsidized for a considerable time, and would have to enter into production of various kinds and into competition with purely economic units. The difficulty again presented itself of enabling men who entered these communities to feel that they were really useful, because if their productive work was not carried on in the competitive sense they felt that it was not on the same level as ordinary production. One or two schemes were running, but they were not too successful; one, he understood, was working now on economic lines and paying its own way, but that was the only one so far. A conference was arranged by the Minister of Pensions a month or two ago with the Ministry of Health and the Ministry of Labour to go into the question of the treatment of tuberculous ex-service men. It was agreed that no matter how much they might try, as the Ministry of Pensions, to help ex-service men, their case was bound up with the general question. The Ministry of Pensions, however, was responsible for the payment of pensions and allowances, and it had its inspectors to see that the men were properly attended to in institutions. At the beginning of the pensions scheme all tuberculous men were assessed and treated exactly as were those who were suffering from other disabilities, but later it became necessary to consider them as a class apart. There were among ex-service men 37,000 cases of tuberculosis due to or aggravated by war service, and five and three-quarter years after the end of hostilities such cases were being admitted for pensions at the rate of 190 per month. The annual expenditure of the Ministry of Pensions on tuberculous cases was between six and seven million sterling, and of that only £300,000 went for administration and medical services. Most of the money went as hard cash to the pensioners themselves. In the case of men who got 100 per cent. disability after a course of treatment in the sanatorium it was true that the assessment was for six months. Contrasted with their ordinary assessment, it must seem strange that when they came out of the sanatorium in better health than when they entered it they should get the 100 per cent., and then at some other time revert to their ordinary pension, but it was done to relieve their minds from financial embarrassment. Following on the six months' rate their assessment came down no lower than 50 per cent. for a period of two years. He could promise that the matter of co-ordination was being kept in mind. The conference which was held recently raised certain points which were now under consideration.

Health Commissioner at Simla.—Mr. Hogge asked, on August 4th, whether the post of Public Health Commissioner at Simla would be vacant in August of this year, and whether only medical men holding a British diploma in public health would be considered for the appointment. Mr. Richards replied that the vacancy would occur on the date named. The appointment was made by the Government of India, and he had no information in regard to the second part of the question. Mr. Hogge asked whether it was not a fact that every junior commissioner in this service must hold the British diploma in public health before he received appointment. Would the Government undertake that this post—the best in the Indian Public Health Service—should not be given to any man without such diploma. Mr. Richards said he was not aware that the facts were quite as stated, but he would draw the attention of the Secretary for India to the point. The appointment was made by the Government of India without reference at all to the Secretary of State.

Workmen's Compensation (Silicosis) Bill.—In moving the second reading of this measure, which came down from the Lords, Mr. Rhys Davies, on August 5th, recalled the Workmen's Compensation (Silicosis) Act of 1918, which enabled the Home Secretary to make schemes to cover those engaged in trades subject to exposure from silica dust. In 1919 a scheme was instituted to cover the cases of those engaged in the manufacture of ganister or silica bricks. For this purpose a special compensation fund was created. Contributions were obtained from the trade itself, limited in a way that compensation would not be limited under this bill. Trouble arose because in cases of silicosis accompanied by tuberculosis no workmen's compensation was payable. Under the present bill compensation would be extended to these mixed cases. Workmen might have been employed by one firm for three or four years and yet it might not be ascertained until some time afterwards, when perhaps he was engaged by another employer, that he was suffering from this disease incurred during the previous employment. Therefore under the measure a man might draw benefit in respect of silicosis though he might suffer at the same time from tuberculosis, and might have changed his employer. Silicosis did not arise from many occupations. But in addition to the scheme already mentioned for dealing with persons engaged in the manufacture of ganister or salica bricks, the Home Office proposed to set up a scheme to cover persons employed in the grinding industry—in Sheffield and some, he believed, in the West Bromwich district. The arrangement which had been made in this matter was unique. There were some industrial diseases not sufficiently definite for inclusion in the ordinary scheme of workmen's compensation. For instance, the development of cataract of the eyes in men employed in steel and iron manufacture. That was a problem which the Home Office had under its eye at the moment. Under the present measure, when a man was suffering from tuberculosis he would not be allowed to continue in that employment because he would be more liable to contract silicosis as well. Dr. Fremantle agreed that this was a useful measure to advance, but there was the objection to such legislation that it was handled by different departments. The Ministry of Health took responsibility for perhaps one-third of the health of the people; the Board of Education for another third; and the Home Office for another third. The Home Secretary, though essentially as regards these bills a Minister of Health, was not advised in the same direct manner as was the Minister of Health. The Minister of Health had a large medical department, but the chief inspector at the Home Office was not a medical man, and the medical inspectorate was subservient to the lay inspectorate. The bill was read a second time, and afterwards passed all its stages.

Pensions Ministry Medical Officers.—In answer to Dr. Fremantle, on July 31st, Mr. Roberts stated that 115 out of the 400 full-time medical officers, and 644 out of the 2,408 sessional medical officers, in the Ministry of Pensions did not serve overseas. Nearly 94 per cent. of these officers had served either at home or abroad. No medical officer with overseas service had been discharged in order to provide for another officer without such service. In the selection of medical officers for discharge, which was unavoidable owing to the continued decline in the work of the Ministry of Pensions, full regard was paid to war service and to the qualifications required for the work to be performed, but efficiency was the first consideration.

Tuberculosis Cases.—Mr. Roberts stated, on July 31st, in answer to Dr. W. E. Elliot, that whenever a course of residential treatment was prescribed by a tuberculosis medical officer for a condition accepted by the Ministry of Pensions as due to, or aggravated by, war service, and such treatment was given in a sanatorium approved by the Ministry of Health, the allowances and other expenses authorized under Article 6 of the Royal Warrant were granted. Dr. Elliot asked whether the pensions for tuberculosis patients were reduced after the discharge of the patient from the sanatorium for the second time to 40 per cent.; and whether the Minister would give instruction that it should be 100 per cent. for six months as in the case of dismissal for the first time. Mr. Roberts said there was no general rule in operation. On discharge from a sanatorium for the second, or any subsequent period of treatment, a patient was given the pension at the rate of assessment which was found by a medical board to be appropriate to his condition; unless he were still eligible for the special rates of pension available for a certain period in cases of tuberculosis. These rates, which were 100 per cent. for the first six months after discharge, following the first period of treatment in a sanatorium or training centre, and not less than 50 per cent. for the succeeding two years, were designed as a special measure to assist cases in the early stages of the disease. Apart from the period of two and a half years to which these rates applied, cases of tuberculosis had to be dealt with under the general provisions of the Warrant applicable to all classes of disability.

Tuberculous Cases in Metropolitan Prisons.—Mr. Stranger asked the Home Secretary, on August 4th, whether he was aware that an insufficient number of cells were set apart in metropolitan prisons for offenders suffering from tuberculosis, and that in consequence such offenders were put in ordinary cells. Mr. Davies replied that at Wandsworth, Wormwood Scrubs, and Holloway, the number of special cells for tuberculous patients was in excess of requirements. At Pentonville and Brixton the number of tuberculous cases was often somewhat larger than the number of special cells. When this occurred the cases were either located in adjoining ordinary cells or were removed to separate rooms in the hospital. In all cases the patient received appropriate treatment. It was proposed to provide additional special cells without delay.

Anthrax.—Mr. Buxton stated that he was aware that there was an increase of 40 per cent. in the number of cases of anthrax in 1923 as compared with 1922, but there had been no increase in the first half of 1924 as compared with 1923. What had happened was that the increase over 1922 had been maintained. The incidence of anthrax was, however, low, the total number of animals affected throughout the country in 1923 numbering only 844. The eradication of anthrax was a difficult problem, inasmuch as investigation went to show that about 80 per cent. of cases in this country occurred on farms on which there had been no previous outbreak, and that infection had been brought to the farm by foodstuffs or manure, etc., from abroad. There was also reason to believe that foodstuffs became infected during transit in countries of origin. It would hardly be practicable to attempt here the disinfection of the very large quantities of materials involved even if this could be done without damaging them. The Ministry had sought the co-operation of shipping companies with a view to keeping

foodstuffs, skins, and bone manure separate on the voyage. This would be beneficial in minimizing risks of infection, but only partly met the complicated and difficult problem.—Mr. Henderson on another question said that the Home Office had throughout been fully alive to the desirability of arranging, if practicable, for disinfection in the country of export. With this object in view, in 1918 representations were made to the Government of India, from which country the greater part of the infected material came. The Indian Government, however, had not seen its way to arrange for disinfection in India, and therefore the British Government was thrown back on the alternative of providing for disinfection at the port of entry in this country. At Liverpool the material was conveyed direct from the ship to the disinfecting station, so that the risk to dock workers was reduced to a minimum.

Estimates Committee: Ministry of Pensions.—The Select Committee on Estimates, in a printed report on the Ministry of Pensions, states that the estimate for the current year 1924-25 amounts to £66,947,180, as compared with an estimate of £73,655,240 for the year 1923-24, and with a net expenditure of £106,360,500 for the year 1920-21, when the peak was reached. The main causes for the decline from the highest point, apart from the deaths of pensioners, are the recovery of pensioners under medical treatment, the remarriage of widows, and the growing up of children. The capital value of present war pensions liabilities is estimated at about £900,000,000, as compared with £1,400,000,000 in 1921. The present staff is just over 18,000, as compared with 32,045 in 1920-21, and the cost of the staff has been reduced to £2,337,000, as compared with £4,252,188 for the peak year. The percentage cost of administrative expenditure is about 4.53 per cent., compared with 5.9 for the peak year. This diminution the committee found to be attained without impairing the efficiency of the medical or non-medical services, and is deemed highly creditable, and the committee reports that further economies are expected in the near future. The Ministry has considered the question of treatment allowances, and in particular the possibility of instituting different rates for different localities. In certain counties where wages are low the treatment allowance is considerably in excess of what the patients would earn in health. But it is held that the treatment allowance interlocked with the pensions scale, and that it would be impossible to separate the two without a breach of faith. In regard to hospital treatment the policy of the Ministry is to rely mainly upon Ministry of Pensions hospitals. The committee believes that there are a considerable number of beds unoccupied in the military hospitals, and recommends that the question of utilizing them for patients under the Ministry of Pensions be immediately reconsidered. There are at present thirty-six Ministry hospitals with just over 8,000 beds, of which 10 to 15 per cent. are unoccupied.

Answers in Brief.

Mr. Wheatley said that, taking as a whole the people dealt with under the national insurance scheme, there was no evidence that the prevalence of unemployment had adversely affected the claims for benefit under the Act.

Correspondence.

AFTER-HISTORY OF AFRICAN TRYPANOSOMIASIS, 1911-1924.

SIR,—In 1911 over 12,000 natives were examined in the territory of the Gambia; about 100 of them were infected with trypanosomes.[1] An effort was made to keep track of these persons, in order to ascertain the duration of untreated trypanosomiasis in African natives. The population of the Gambian Protectorate is comparatively stable and offers a unique opportunity for the continued observation of natives over lengthy periods. But, for various reasons, in only one district were the cases followed as closely as had been hoped. In 1919 it was recorded,[2] from the observations of the travelling commissioners, who had reported from their respective provinces, that "four natives living in the Protectorate of the Gambia, found to be infected with trypanosomes at the beginning of 1911, were in good health at the end of 1918."

Commissioner E. Hopkinson, C.M.G., D.S.O., M.D., wrote in 1920 that the four natives mentioned[2] as being in good health in 1918 were still alive and well. In 1924 he had lost track of three of these cases, but one was still living and had "never shown a sign" of trypanosomiasis. In 1920 Travelling Commissioner E. B. Leese reported that four more of the cases of trypanosomiasis observed in 1911 were still living. (Only one of the cases found in his district in 1911 was known to have died of "sleeping sickness," in 1916.)

From these reports it may be concluded that eight natives of the Gambia, who were infected with trypanosomes at the beginning of 1911, were in good health in 1920, and that one of these cases—nothing is known of the others—was still alive in 1924, and had never shown a sign of "sleeping sickness."

The history of these cases permits the definite statement that either human trypanosomiasis may be an extraordinarily chronic infection or that spontaneous recovery from the disease may not uncommonly occur in African natives of the Gambia. The situation is one which can be clarified by the continued observation and examination of cases over long periods. To do so is, therefore, a work which can only be undertaken by a permanent authority.—I am, etc.,

JOHN L. TODD, M.D.

McGill University, Montreal, July 22nd.

[1] Todd and Wolbach: The Diagnosis and Distribution of Human Trypanosomiasis in the Colony and Protectorate of the Gambia, *Annals of Tropical Medicine and Parasitology*, vol. v, April 20th, 1911, to February 26th, 1912, pp. 245-286.

[2] Todd: (1) The After-History of Trypanosomiasis in Africa, *New Orleans Medical and Surgical Journal*, vol. 72, No. 5, November, 1919.

COCAINE SUBSTITUTES.

SIR,—By his letter in your issue of August 2nd, Dr. Copeland forces me into a controversial attitude that I would fain have avoided. "Anaesthesia" has hitherto invariably meant the blockage of afferent nervous impulses. He writes that he "used the word 'anaesthesia' to apply to the loss of power of conductivity of the cardiac fibres of the vagus"—namely, the efferent fibres—a use for which I can conceive no possible sanction. This is not a trivial point of dialectic, but the fundamental matter of the whole investigation; for the effects of drugs on the two sets of fibres are quantitatively quite different. In fact, of his experiments, these, as far as can be seen, do not demonstrate anything immediately related to the subject of anaesthesia.

Dr. Copeland explains that he did not assume that the convulsant effect of these drugs is directly related to habit formation. He wrote:[1]

> "When these drugs are injected . . . their convulsant action can be placed in the following order: cocaine, butyn, tutocain. This property of giving rise to powerful stimulation and excitement of the cerebral cortex is characteristic of one of the two main groups of addiction drugs represented by cocaine."

Would he inform us what meaning we *are* to attach to the passage I quote? And further, where in his paper we can find the facts which led him to "Conclusion 4: Beside cocaine, it is believed that the properties of butyn and tutocain may render them addiction drugs"?

Again, he wrote,[1] "These experiments show that . . . For the nose, cocaine and tutocain are alone useful." This can only mean (*a*) for the nose, cocaine and tutocain *are* useful; (*b*) other drugs are *not* useful; (*c*) the experiments show this. I can find no record in his paper of any investigation of surface anaesthesia in the nose. Experiments on the eye do not in themselves afford us any information as to actual or relative effect on the nasal mucosa. Yet in support of his claim for tutocain as a nasal anaesthetic, Dr. Copeland, in his letter, adduces his comparison of its action on the eye with that of novocain. "And even novocain has proved very efficient in the hands of one eminent rhinologist." Who is the anonymous authority? And what weight must we give to such a vague quotation, of verifying which we are given no opportunity? Unless I am mistaken, this passage refers to injected novocain, and is therefore entirely beside the mark. In any case, it is in flat contradiction to the quoted statement which it was brought to support.

I referred Dr. Copeland to the considered opinion of some of the leading rhinologists of this country. He declines "to analyse the medley"! Had he done so he would have found that they [*sic*] do not suggest, as he says they do, that the *most* important property of a local anaesthetic for rhinology is shrinkage power—(for example, Mr. T. B. Layton, loc. cit.). ". . . *apart from anaesthesia* . . . the chief matter was the shrinkage value." If Dr. Copeland wishes to put the "medley" in evidence against me, he should at least be correct.

I do not "object" to his experimental method: it is simply not to the point. The practical question is whether a given substitute, applied per nares in a reasonable dose, will constantly effect in man a shrinkage comparable to that

[1] BRITISH MEDICAL JOURNAL, July 12th, 1924, p. 41 et seq.

produced by cocaine. With tutocain I have been unable to obtain this. That is all that I have claimed, not that absolutely no shrinkage occurs. Dr. Copeland describes his experiments as quantitative, though he does not afford us the advantage of his actual findings: I have already admired their ingenuity, and am willing to concede their infallibility. But surely on this point clinical observation (which is exceedingly simple), however liable to error it may be thought, must provide the final court of appeal. Dr. Copeland "cannot explain the discrepancies" of clinical findings. A single personal observation would at least assist his judgement of the subject on which he is writing. I still maintain that the statement, "These experiments show that . . . For the nose, cocaine and tutocain are alone useful," is inexact, misleading, and therefore regrettable.—I am, etc.,

Clifton, Bristol, Aug. 6th. E. WATSON-WILLIAMS.

CHRONIC INTUSSUSCEPTION.

SIR,—I was particularly interested in the article in the JOURNAL of May 24th (p. 904), by Dr. Ambrose W. Owen, on this subject. It is one of the strange features of the distribution of disease that this condition, so rare in Western lands, is a relatively common one in parts of the East. In Formosa, where I worked for about twenty years, chronic intussusception formed one of the commonest of serious intra-abdominal surgical conditions. Personally I can speak from considerable experience, as I have myself operated on close on forty cases, and my colleagues in Formosa have also treated many others. The two points with which Dr. Owen deals are those of diagnosis and treatment, and on these I should like to make a few remarks.

In the absence of *x*-ray examinations, the possibility for which did not then exist with us, the point on which we came most to rely was the symptom of pain. No other sign or symptom is so reliable. Vomiting may have been present at the beginning, but not rarely was absent; the passage of blood in the stool was frequent, but by no means constant; the presence of a tumour was most uncertain. Pain was always characteristic, being paroxysmal in nature, with complete or almost complete remissions, except in very late cases, between the attacks, which might run from one or two to many in the twenty-four hours. One form of the pain was quite pathognomonic, and in these cases the patient, when asked to describe it, would place the hand over the right iliac fossa and trace the line of the pain up the region of the ascending colon and along the transverse colon. In one case I had the rare opportunity of watching a lump form in the caecal region as the paroxysm began, and travel up the ascending and along the transverse colon, retiring in the opposite direction as the pain passed off.

With regard to treatment, the cases divided themselves with us much in the way that Dr. Owen describes. One class of advanced cases, with a large and irreducible mass, seemed almost hopeless. The condition of such patients was always very bad, operations of any severity proving too much for them. The second class, and happily much the largest, was of those in whom the intussusception was almost completely reducible. It was seldom that this could be quite accomplished, usually the last two inches or so being still irreducible. In these cases an almost uniformly successful operation was to reduce the intussusception as far as possible, without unreasonable force, and then to do an ileo-colic anastomosis round the remaining intussuscepted portion. This operation proved not merely temporarily, but permanently, satisfactory; and I was able to watch several cases over a period of years after operation, one of these for no fewer than seventeen years, during which no further trouble occurred. What happens to the remaining intussuscepted mass after operation I am unable to state, but I suspect that with the cessation of pressure the mass gradually resolves and the bowel again becomes completely patent. At any rate, repeated examinations, years after operation, have failed to reveal any persistent mass in the right iliac fossa.

One word more as to cause. This remains obscure, but in the majority of my cases there appeared to be a tuberculous mass in the caecum. Several cases had diffuse miliary tubercles over the surrounding intestines; almost all had marked family histories of the tubercle, and one case died of pulmonary phthisis some years after operation without any further abdominal symptoms.—I am, etc.,

Shanghai. JAMES L. MAXWELL, M.D.
Late of Formosa.

NEED FOR *X*-RAY EXAMINATION OF CARIOUS TEETH.

SIR,—I beg leave to repeat that the employment of the hard brush and chemical dentifrice is the most frequent cause of destruction of the enamel and laceration of gums, with the result—early decay in the former, and in the latter a portal provided for the entrance of pathogenic germs to the blood stream.

I wish to add that I find teeth are so commonly "filled" by dentists in which subsequent radiological examination demonstrates sepsis at roots, and rarefaction of sockets, that I do not hesitate to emphasize the necessity for an *x*-ray photograph in every case before attempting to fill any dental cavity. If deep sepsis—much less any moribund sign—exists the tooth should be extracted.

The practice of blindly sealing a dental cavity with cement, in my opinion, is as fatuous as to remove a diseased appendix and not to take the trouble to examine the other abdominal organs, even the adjacent ileum for inflammatory adhesions which if ignored lay the foundation for a subsequent attack of acute intestinal obstruction; I need hardly mention the not uncommon sequence—symptoms of appendicitis continuing after removal of the appendix.—I am, etc.,

Buenos Aires, June 29th. JOHN O'CONOR, K.B.E., M.D.

TREATMENT OF BILHARZIASIS.

SIR,—Since February, 1919, I have given over 1,700 intravenous injections of tartar emetic without a single death or serious toxic effect; a further series of 100 injections of the sodium salt was associated with too much muscular pain or general debility amongst the patients to be continued, though this may have been partly due to the distilled water employed. A year after the injections were discontinued one patient with bilharzia died from a motor-bicycle accident, another from carcinoma of the bladder, and a third following an operation for the removal of a renal calculus.

It has been my practice to dissolve the drug along with sodium chloride (soloid No. 4,848) in boiling tap water, and to inject not more than 3 c.cm., commencing with 1/2 grain for a juvenile adult. With the sodium salt 20 to 30 grains of tartar emetic are generally necessary to cure the adult bilharzia patient. However, with the potassium salt, not more than 18 grains are required for a patient of 18 or over, 15 grains for a patient of 15, and 12 for a child of 12, provided the injections are given regularly over a period of twenty-eight days; and, as it is unnecessary to give single doses of more than 1½ grains, toxic effects are avoided.

Once the point of the needle is well inside the lumen of the vein local accidents are avoided by injecting the solution without undue delay. The curative dose of the potassium salt would appear to be the same as that of emetine; there is no clinical reason for injecting the latter drug into the blood stream, and, when a reliable solution is injected intramuscularly with or without the addition of 1 per cent. phenol, the intramuscular injection of emetine may be used in preference to intravenous antimony.—I am, etc.,

Durban, Natal. F. G. CAWSTON, M.D.Cantab.

THE Dutch Medical Association, which consists of sixty divisions with a membership of 3,373, or about 90 per cent. of all the practitioners in Holland, has celebrated its diamond jubilee by the issue of a memorial volume containing papers on Dutch medicine before the foundation of the Association, Dr. A. F. H. de Lespinasse (its founder), the origin of the Association, and the history of its library. The volume contains numerous portraits of officers of the Association, including Drs. Daniels, Donders, Pel, Snellen, Stokvis, Treub, and Wenckebach, as well as full-page illustrations from some of the rarer works in the Association library.

Obituary.

ANDREW SMITH, M.D.Edin.,

Past-President, North of England Branch, British Medical Association.

It was with feelings of genuine sorrow that the medical profession and the whole community of the district received the news that Dr. Andrew Smith of Whickham had died with tragic suddenness on the evening of August 1st. Before the fatal syncopal attack he was in good health and had done a hard day's work.

Andrew Smith was born in Leven, Fifeshire, 69 years ago. He had a distinguished student career at Edinburgh, where he graduated M.B. with honours in 1876, and five years later he proceeded to the degree of M.D. Nearly fifty years ago he began practice at Whickham, co. Durham, and there he spent the remainder of his life; through sheer merit he built up a large practice, in the conduct of which at the time of his death he was assisted by three of his sons. His outstanding feature was the high standard he maintained in his clinical knowledge. He made himself *au fait* with everything new in medicine and surgery; so keen a student was he that no post-graduate class in Newcastle-on-Tyne was ever formed that did not have Dr. Smith as the most regular attendant, and it was a rare event for him to miss a meeting of any of the local medical societies. He was an ex-President of the Northumberland and Durham Medical Society, also of the Newcastle-on-Tyne Clinical Society, and on the amalgamation of these as the Newcastle-on-Tyne and Northern Counties Medical Society he continued his active membership. He was an able speaker and often took part in the discussions. His scholarly presidential addresses to these societies will long be remembered by those who were privileged to hear them. He was a keen observer and he made some valuable contributions to the literature in the medical journals.

Dr. Andrew Smith was a staunch supporter of the British Medical Association, and had been a member for forty-one years. He successively filled the offices of Chairman of the Newcastle-on-Tyne Division and President of the North of England Branch. He was an active member of the Executive Committee of the Division, also of the Branch Council, while he acted as a Representative of the Division at the recent Annual Meeting at Bradford. When the Annual Meeting was in Newcastle-on-Tyne in 1921 he did yeoman service on the Executive Committee. He also represented the North of England area on the Insurance Acts Committee, which necessitated not infrequent journeys to London. His friends for some time had been apprehensive that he was overtaxing his strength, but nothing would persuade him to curtail his activities. His constant valued companion was a gold snuff-box, which was presented to him by appreciative members of the Newcastle Division in 1912. He took a warm interest in his Alma Mater, and had served as President of the Edinburgh Gradutes' Association in Newcastle-on-Tyne. He was a member of the Society of Medical Officers of Health and had acted as President of the Northern Branch. In 1904 he was appointed medical officer of health to Whickham Urban District Council, which appointment he retained until his death. He was a valued official and his work was warmly appreciated by the council. Until he retired in 1921, owing to the age limit, he had acted as public vaccinator to his district. Other appointments included that of honorary medical officer to the After-Care Home at Dunston Hill, and to the Edith Brough Children's Holiday Home at Whickham. He was honorary surgeon and instructor to the Whickham Division of the St. John Ambulance Brigade, and early this year was made an honorary associate of the Order of St. John of Jerusalem in recognition of his services to the ambulance movement. In recent years probably his most active sympathies were claimed by the Whickham and District War Memorial Cottage Hospital. He was largely instrumental in raising the funds for the purchase and the equipping of the hospital. Under his skilful guidance a thoroughly up-to-date hospital has materialized, and his appointment as the honorary medical adviser to the institution has ensured the outstanding success it has attained.

Dr. Smith leaves a widow and family of four sons and three daughters, three of the sons being members of the medical profession. To them we tender our deep sympathy in their loss. His humanity, his charm, his humour, his integrity, his uniformly good temper, his unfailing courtesy, his loyalty to his professional colleagues, and his tolerance of other people's opinions, endeared him to all. The general esteem in which he was held was amply testified at the funeral, when the large church at Whickham was filled to overflowing by representatives of every section of the community. The medical profession was particularly in evidence, and many doctors had travelled long distances to honour the memory of a warm friend and colleague.

R. J. W.

Mr. G. Grey Turner writes:

When I began the study of medicine at Newcastle-upon-Tyne thirty years ago, the brothers Smith of Ryton and Whickham were held up to us students as practitioners exemplifying the highest ideals of our calling. Now we deplore the death of the younger brother, Andrew, of Whickham, whose life and work for all these years have been an example and an inspiration. As a house-surgeon I learnt to appreciate his thoroughness, for many cases were sent in to the wards from his practice, and each was accompanied by a carefully written letter giving the history of the case, its progress, the circumstances which led up to the necessity for hospital treatment, and a polite request that a report should be sent as to the findings. This was invariable with Dr. Smith, and I constantly hold up his plan as an example which young practitioners should strive to follow. When I afterwards became surgical registrar I carefully preserved many of these letters; they are now to be found bound with the hospital records, and form valuable additions to the notes of the cases concerned. His accuracy in diagnosis was quite remarkable, and he followed up the after-history of his cases with great care and enthusiasm.

Though the subject of this note had a great influence on the profession, not only in this district, but far wider afield, I am sure his greatest achievement has been the training of the succession of young graduates who have acted as his assistants. For many years an assistantship at Whickham was looked upon as the best preparation for practice, and at that time was one of the most comprehensive post-graduate courses that any man could take. Though I had not the privilege of acting in this capacity I soon appreciated its value, and I know that there are very many men in the counties of Northumberland and Durham who owe more to the time spent as assistant to Dr. Smith than to any other part of their education. To them it may be said that their principal was always appreciative of their work, and I have frequently heard him speak of the constant help and loyalty which he had received from them. I hope that some of his former assistants will speak of these experiences and will tell the profession more of the very admirable way in which the late doctor conducted his work, and especially of those pleasant Sundays when, after a family meal at his hospitable board, a regular clinic was conducted on the interesting and obscure cases collected from the various parts of his wide practice. The life at Whickham was always strenuous; but it must have been a fearsome ordeal before the days of the motor car, and I have often heard Andrew Smith refer feelingly to the words of Oliver Wendell Holmes, whom he much admired, and who made one of his characters say that in a country doctor's life a house was all very well in an occasional way, but for regular occupation nothing could equal a buggy! In the war time he shouldered an enormous amount of work while his three doctor sons, at that time assistants in the practice, were absent on foreign service.

Smith was most regular in his attendance at scientific meetings, and in fact medical functions of all sorts, and for nearly half a century nothing of the kind in this district has been complete without Smith and his snuff-box. In the days when transport was not so easy as in these degenerate times, he thought nothing of walking out to Whickham, a distance of about four miles, at any hour of the night after some such function in town. I followed him in the presidential chair of the Newcastle-upon-Tyne Clinical

Society, and I found it hard to live up to the standard which he had set. The address which he delivered at the commencement of his year of office was a remarkable one in many respects and a fine record of the work of his practice. It was entitled "The country doctor," and I always remember how well he formulated the real criteria of sound education when he said, speaking of the country practitioner, that "His knowledge so far as it goes should be thorough and based on a sound pathology, *so that in unusual cases he may be able to act on true principles rather than routine.*" The italics are mine, but none will deny their justification. Men of the stamp of Andrew Smith have an influence for good wherever they happen to live and work, but it is particularly fortunate when such men are found in the districts where medical schools are situated, and his too early death will be keenly felt in more directions than is obvious at first sight. His life and work are well portrayed in the poem "The Auld Doctor," written by his equally well known and respected elder brother of Ryton, for whom sincere sympathy will be felt in this new trial.

REGINALD JAMES COPE COTTELL, C.B.E.,

Colonel R.A.M.C.(ret.).

The large number of medical officers who during and after the war came into relation with Colonel R. J. C. Cottell will all receive the news of his death with sincere sorrow. Born in 1858, the fourth son of Major James William Cottell of the Honourable East India Company's Service, Reginald Cottell followed the example of an elder brother in entering the medical school of St. George's Hospital, whence he qualified in the year 1885, by passing the examination of the Society of Apothecaries. In the following year he obtained the diplomas of M.R.C.S.Eng. and L.R.C.P.Lond., and not long afterwards passed into the Royal Army Medical Corps as a surgeon on probation.

When the Boer war broke out he was stationed in Natal, whither he had returned after sick leave in England, during which he was married. It is characteristic of the privations and inconveniences of army life that his young bride and he did not meet again till four years had passed, when he saw his first-born child for the first time. Cottell served throughout the war, and was present at many actions, receiving the Queen's Medal with three clasps and the King's with two clasps. He subsequently served at Gibraltar, and in 1906 was appointed junior assistant surgeon to the Royal Hospital, Chelsea, and succeeded to the senior post of physician and surgeon in 1910, which post he held till his retirement in 1913. At Chelsea he did excellent work, both medical and surgical, in looking after the pensioners' health and seeing that their infirmities were treated by the most recent operative or non-operative methods. At that time there was no Ministry of Pensions, but its duties were carried out by the staff at the Royal Hospital. Cottell did good work in this department, and earned the respect and friendship of the Governor, the late Field-Marshal Sir George White, V.C.

After a year's retirement the great war called him forth to undertake recruiting duties in the London district, but in 1915 he was appointed to command King George's Hospital. This great Red Cross hospital was established in the newly built premises of H.M. Stationery Office in Stamford Street, Waterloo Bridge Road. The duties of this post were most onerous, as in addition to the responsibilities on the spot they included the supervision of other institutions, and, moreover, he was entirely without any assistants experienced in the administration of a military hospital. The building was vast and not very suitable for the purpose, but it had to be made the best of. The staff included a large number of distinguished consultants in medicine and surgery and their special branches, many of whom were, to put it mildly, unsympathetic towards the disciplinary methods necessary in a great military hospital, and some of them had little consideration for the difficulties which beset the commandant. The patients also gave a great deal of trouble. Many unquiet spirits who could not be managed in smaller institutions were sent to King George's, where at least on one occasion the more able-bodied patients broke out into actual mutiny, during which the commandant's life seemed to be almost in danger and he suffered physical injuries, of which he felt the results long afterwards. In this trying post Cottell's sterling qualities enabled him to triumph over all difficulties. Shortly afterwards he was made colonel by brevet, and the Order of St. John rewarded him by making him a Knight of Grace. On the closure of the hospital and consequent termination of his appointment he received the military C.B.E. These rewards can hardly be considered excessive.

Reginald Cottell was a man who combined great firmness when a principle was at stake with gentleness of manner and method and a modesty which shrank from all self-assertion. He was unselfish to an unusual degree and capable of complete self-abnegation when duty or the public good called for it. For some two years before his death he was hopelessly ill, and for the last sixteen months was completely bedridden. Knowing as he did his own condition, and suffering much pain and constant inconvenience, he maintained almost to the last a cheerful demeanour and bore all his sufferings like a soldier and a philosopher till death released him on August 7th. He was a devoted husband and father, and leaves a widow and three daughters to mourn for him. His elder brother, Lieutenant-Colonel Arthur Cottell, also late R.A.M.C., survives him.

ROBERT DAVIES EVANS, M.R.C.P.Ed.,

Festiniog, North Wales.

On August 9th Dr. Robert Davies Evans died, in his 69th year, at Blaenau-Festiniog, North Wales. He was born at Criccieth, his mother being a woman of great intellectual ability and deep feeling. He was intended for the ministry, and was placed in a school and college of theological colour at Haverfordwest; but, whilst retaining an intimate regard for the school of divinity to the end of his life, he decided to pursue the art of medicine. He served a pupilage under the late Dr. Williams of Middlesbrough, and subsequently studied at the Edinburgh School of Medicine, where he received the diplomas of L.R.C.P. and L.R.C.S.Ed. in 1878, at the early age of 21, being one of the most earnest and brilliant students of his year. His medical studies were greatly influenced by the teaching of Lister, whilst his own work was directed by James Finlayson, and that master of clinical investigation, Sir William Gairdner of Glasgow. He took the M.R.C.P. in 1882, and decided to pursue his career at Blaenau-Festiniog, where he practised for forty-seven years. Soon after settling there he married Elizabeth Ann Jones, eldest daughter of the Rev. Thomas Jones of Eisteddfa, and the sister of two medical men, Sir Robert Armstrong-Jones and Colonel J. Lloyd T. Jones, I.M.S., formerly the assay master at the royal mints in India. Dr. Evans was a wide reader of Welsh literature and theological studies. It would be difficult to find a man more endowed with that rare faculty common sense, and this, with the fact that he kept himself abreast of modern medicine, secured for him the closest confidence of his patients, and of late years an extensive consulting practice in North Wales. He was chairman of the Festiniog magistrates and High Sheriff for Merionethshire in 1918 to 1919. His other appointments included those of surgeon to the Oakeley Hospital, certifying factory surgeon, and surgeon to the Trawsfynydd military camp.

Dr. Evans became a member of the British Medical Association in 1886, and was chairman and representative of the South Carnarvon and Merioneth Division in 1909. His eldest son, Sir Thomas Carey Evans, M.C., F.R.C.S., Lieut.-Colonel, I.M.S., married the eldest daughter of Mr. Lloyd George. A daughter, Dr. Olwen Evans, succeeds to her father's practice; she was the first woman doctor to receive a parish appointment in Wales. Four of his sons served in the late war, and one was killed in action; another son is now studying medicine. Dr. Evans's life was strenuous and active. He died in harness, as he would have wished, a conscientious, toil-worn worker, and was buried at Tabor, his funeral being the occasion for general mourning.

THE LATE DR. T. D. LISTER.

Dr. S. Vere Pearson writes:

I knew T. D. Lister for over twenty years and esteemed him as one of the wisest and most genial of my friends. His death removes from our midst one of the most clear-sighted physicians of the day. He was a sound and clever clinician, but more remarkable was his extraordinary grasp of the great problems of medicine. His outlook upon the larger aspects of tuberculosis, for example, as they affected social hygiene, politics, and industrialism, etc., was always broad and his vision far-seeing. He was one of the first to emphasize the value and importance of demography. Years before the war he was advocating "defining the plague spots of the disease" by working out rates of mortality and morbidity for tuberculosis in different industries, factories, areas, etc. He recommended that the whole force of our artillery should be first directed against the districts or groups of workers which showed an excess above a fixed standard figure, which was to count as the "tuberculosis index." He levelled incisive and telling criticism against any opinions, however widely accepted, which he considered ill supported by good evidence, and he had much ability in expounding his views. His profound knowledge of the problems of life assurance was well recognized in many medical circles in England; but it extended far beyond these shores, for some of his writings on these subjects have been translated into many languages. His manifold and useful labours in connexion with public institutions and other associations were always carried through with a maximum of amiability and a minimum of advertisement of himself. The recitation of these activities, already given in the British Medical Journal of August 9th, p. 256, are an indication of their extent. The arduous work he did in this direction was always cheerfully conducted. It often brought him into contact with the fussy ones and the busy-bodies. He generally showed a placid tolerance of such people, though he occasionally gave vent to very caustic criticisms on the foibles and failings of some of the bureaucrats. Dr. Lister was a man who never stooped to anything petty. He studiously held aloof from all intrigues, wire-pulling, or cliquism, though sometimes this characteristic was disadvantageous to his preferment and material interests. Our heartfelt sympathy goes out to his wife and children in their great loss.

Dr. George Duppa Collins died on August 6th at his home in Broseley, Shropshire. He was educated at King's College Hospital, and obtained the M.R.C.S.Eng. diploma and the L.S.A. in 1878. After serving as house-surgeon at Shrewsbury Infirmary he commenced practice in Broseley about forty years ago. A charming personality combined with considerable professional ability soon resulted in a most extensive practice. About twenty years ago his heavy work affected his heart and he retired from practice. After a long rest he regained his health and spent some time in British East Africa. Returning to his home he entered fully into local affairs, becoming a magistrate, a town councillor, and a guardian, his tact and sound common sense proving of considerable service. When the war came Dr. Collins joined the Medical Recruiting Board at Shrewsbury, and daily used to motor there in all weathers. After the war he continued working on the Pensions Board. A week before he died he was taken suddenly ill at a Pensions Board at Shrewsbury with anginal symptoms. His condition was so serious that he was removed to the infirmary. On the day of his death he returned home and passed away quietly the same evening. It is interesting to note that having completely retired twenty years ago he should have died in harness. He leaves a son, Captain Edward Duppa Collins. A colleague, N. F. E., to whom we are indebted for the foregoing particulars, adds: Dr. Collins was a keen sportsman, shooting and fishing occupying most of his spare time, and it is to the writer a real sorrow that he will never fish again with his old friend.

Universities and Colleges.

UNIVERSITY OF LONDON.

Dr. Charles Bolton, F.R.S., has been appointed Examiner in Medicine for the remainder of the year 1924, vice Dr. J. Fawcett, resigned, and Mr. C. H. S. Frankau as Associate Examiner in Surgery for the same period, vice Mr. W. H. Clayton-Greene, resigned.

The following grants have been made out of the Thomas Smythe Hughes Medical Research Fund for 1924-25: (1) £100 to Mary F. L. Keene, M.B., B.S., and Evelyn E. Hewer, D.Sc., for the continuation of their investigation of the human foetus, and particularly for the payment of a section cutter for six months; (2) £20 to Dr. Harold M. Woodcock for the continuation of his study of blood digestion by tissue cells along histological lines; (3) £20 to Dr. Gerald Slot for a research on the normal iodide secretion.

The subject of the essay or dissertation for the Rogers Prize for 1926 is "The value of the various methods of investigating diseases of the pancreas."

It has been decided to institute, in accordance with the regulations on university titles, a University chair of physics, tenable at St. Bartholomew's Hospital Medical College.

University College Hospital Medical School.

The Goldsmid Entrance Exhibitions for 1924 have been awarded to C. L. Owen, Trinity College, Cambridge, and Miss F. C. Kelly, University College, London.

St. Mary's Hospital Medical School.

The University Scholarships have been awarded to T. C. Hunt, Magdalen College, Oxford, and D. N. Rocyn-Jones, Downing College, Cambridge.

Medical News.

The Fellowship of Medicine and Post-Graduate Medical Association announces that on August 18th a three weeks' course in the common diseases of the nervous system will begin at the West End Hospital for Nervous Diseases, 73, Welbeck Street. The following courses will be held in September: a fortnight's intensive course in medicine, surgery, and the special and other departments at the Westminster Hospital; in dermatology at the Hospital for Diseases of the Skin, Blackfriars; in diseases of infants at the Infants Hospital, Vincent Square; in ophthalmology at the Royal Westminster Ophthalmic Hospital; and in psychological medicine at Bethlem Royal Hospital. Copies of the syllabus of these courses, with the *Bulletin* giving information of the clinical opportunities of the other London hospitals in association with the Fellowship of Medicine, may be had on application to the Secretary at No. 1, Wimpole Street, W.1.

A monument in honour of the late Professor Grasset, the well known neurologist of Montpellier, was recently unveiled at Lamalou-les-Bains.

The Kent County Council, at its meeting on August 6th, decided unanimously to increase the salary of the county medical officer, Dr. Alfred Greenwood, from £1,400 to £1,600, without any application having been made by that officer.

Courses of instruction for sanitary officers will be held at the Royal Sanitary Institute, commencing on September 24th, for health visitors and child welfare workers on September 29th, and for meat and food inspectors on October 3rd. The introductory lecture to these autumn courses will be delivered by Professor H. R. Kenwood, on Monday, September 22nd, at 5.30 p.m. The date fixed for "health week" is October 5th to 11th, and copies of the statement of the objects, aims, and procedure can be obtained from the secretary at the Institute, 90, Buckingham Palace Road, S.W.1.

A course of lectures and practical instruction for the diplomas in psychological medicine granted by the Universities of Cambridge, London, Durham, etc., will be given at the Bethlem Royal Hospital, Lambeth Road, S.E.1, commencing on September 15th. The syllabus and further particulars can be obtained on application to the physician-superintendent.

The winter session of the Middlesex Hospital Medical School will open on Wednesday, October 1st; Dr. Charles Porter will deliver an introductory address at 3 p.m. at the Queen's Hall on some aspects of preventive medicine, and the prizes will be distributed by Lord Birkenhead. The annual dinner will be held the same evening at 7.30 at the Hotel Cecil, when Mr. G. Gordon-Taylor will preside. Those desiring to be present at the dinner are requested to communicate with the secretary-superintendent at the hospital.

Special courses in dermatology and venereal diseases have been arranged at the St. Louis Hospital, Paris; the fee for each course is 150 francs. The course in dermatology will begin on October 3rd, and that in venereal diseases on November 5th. Both courses will include clinical and laboratory work as well as lectures, and will be held each afternoon, the mornings being free for work in the museum and hospital wards. Further information can be obtained from the secretary of the Faculty of Medicine, Rue de l'Ecole de Médecine, Paris.

The annual dinner for past students of the London Hospital will be held at the Trocadero Restaurant on Wednesday, October 1st, at 7.30 for 8 o'clock. Particulars may be obtained from the honorary secretaries, Mr. E. C. Lindsay, C.B.E., 33, Wimpole Street, W.1., and Dr. Ashley Daly, 5, Seaford Court, Gt. Portland Street, W.1.

THE annual dinner of past and present students of St. Mary's Hospital Medical School will be held at the Connaught Rooms, Great Queen Street, W.C., on Monday, October 6th, at 7 p.m.

ON August 8th, in connexion with the sixteenth international Esperanto Congress in Vienna, medical men of various nationalities held their annual meeting, which was conducted entirely in the international language. Dr. Sôs, Vienna, presided, and papers were read by Dr. Austerlitz (Czecho-Slovakia) on what is lacking in medical education; Dr. Blassberg (Poland) on insulin therapy; Dr. Primmer (Great Britain) on serum therapy; and Dr. Sôs (Austria) on pyorrhoea. Amongst those present was Mrs. Zamenhof, widow of Dr. Zamenhof, ophthalmologist and author of the international language.

A COURSE of bacteriology will be held at the Pasteur Institute, from January 5th to the beginning of April, 1925. As the accommodation for practical work is limited early application should be made by those desiring to attend. The fee will be 500 francs, payable at the commencement of the course. Lectures will be given by Professors Calmette, Levaditi, Mesnil, Weinberg, and Vallée, amongst others. Further information may be obtained from the Pasteur Institute, 25, Rue Dutot, Paris (15e).

W. HEFFER AND SONS, LTD., Cambridge, announce for early publication *Practical Physical and Colloid Chemistry for Students of Biology and Medicine*, by Professor L. Michaelis, Berlin, translated from the second German edition by T. R. Parsons, M.A., B.Sc.

THE head office of the British Petroleum Company, Ltd., distributors of "B.P." petrol, has been moved from 22, Fenchurch Street, London, to the new building of the Anglo-Persian Oil Company, Ltd., Britannic House, Moorgate, E.C.2.

A DESCRIPTION of the Kitchener school of medicine in Khartum was contributed to our columns on September 29th, 1923 (p. 581), by Dr. O. F. H. Atkey, the director of the medical department. In the Wembley Exhibition four photographs of the school are displayed in the bilharzia part of the Tropical Health Section in the Government Pavilion. The photographs give a good idea of the impressive exterior of the building, and of the chemical, biological, and physiological laboratories with the students at work.

WE are informed that the annual report for 1923 of the Chief Medical Officer of the Ministry of Health is now in the press, and it is hoped that publication will be made early next week. The report is in form similar to that of previous years, and contains vital statistics showing that the year under review was the healthiest on record. The chapters are devoted to a number of subjects concerned with personal and public health, including tuberculosis, maternity and child welfare, the insurance medical service, the Poor Law medical service, etc. Particular reference is also made to the remarkable decline in the mortality from typhoid during the last fifty years, the small-pox outbreaks, and human nutrition. The report, including four short appendixes, is 211 pages in length, and may be obtained either direct from H.M. Stationery Office, or through any bookseller, price 3s.

THE city of Canton, China, has lately given a tract of twenty acres, within two miles of the centre of the city, to the Canton Hospital, in recognition of services rendered to the municipality. It is hoped to erect a modern medical school and hospital on the site.

THE *Cronica Médico-Quirurgica de la Habana* has devoted a special number to the proceedings of the sixth Latin-American Medical Congress of the Republic of Cuba, held at Habana in November, 1922. The principal subjects discussed were: bacillary dysentery in Cuba, prophylaxis of venereal disease, treatment of sterility by diathermy, treatment of the pulmonary complications of hydatid disease, and renal tumours.

MESSRS. NEWTON AND WRIGHT, LTD., 471, Hornsey Road, N.19, have issued a new price list of apparatus for radiology.

OF the thirteen original members of the Société de Neurologie of Paris, which was founded in 1900, only four survive—namely, Babinski, Pierre Marie, Meige, and Souques. The others were Gilles de la Tourette, Raymond, Brissaud, Dejerine, Ballet, Dupré, Parinaud, Joffroy, and Gombault.

ARRANGEMENTS are being made to combine in one building in Prague the headquarters of the Union of Czecho-Slovak physicians, the Society of Czech physicians, which is concerned with post-graduate instruction, and the library of Czech physicians. There will also be accommodation for the Association of Czech Medical Students and its library.

THE sixth Congress of the French Society of Orthopaedics will be held in Paris, under the presidency of Professor A. Broca, on October 10th. The subjects to be discussed are: spina bifida occulta, introduced by Dr. Mutel of Nancy; dropped shoulder, introduced by Dr. Paul Hallopeau of Paris; and metatarsalgia, by Dr. Maffée of Brussels.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London.*

MEDICAL SECRETARY, *Mediocra Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 4737, Dublin), and of the Scottish Office, 6 Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

BEE STINGS.

"F. W. L." writes: I was called in to see a lady stung by a bee on the ring finger. The local reaction was much as usual, but the general reaction was such as to endanger life. The pulse was rapid and small, face and neck swollen and cyanosed, breathing obstructed by similar swelling of glottis and bronchioles. This came on a few minutes after the sting, but on a previous occasion the heart was apparently most affected, for she was unconscious within a minute. Wasp stings do not affect her unduly. Is there any way of producing immunity? As bee-keepers soon get a large measure of immunity by repeated stings, this is evidently one way. Is there any firm which supplies graduated doses of bee virus, or is there any other proved method of providing immunity?

PULMONARY TUBERCULOSIS IN LATER LIFE.

"NATAL" replies as follows to "B.'s" request for advice, published in this column on June 14th, 1924 (p. 1078), regarding a patient from Western Canada, aged 57, of moderate means, suffering from pulmonary tuberculosis:

"The patient may not wish to see snow again; but to go from the beautiful scenery of Canada to the dreadfully dull, treeless, waterless Karoo, where very little English is spoken, would be madness, taking everything into due consideration. In the event of death the wife and daughter would be stranded. This would only add to the number of real tragedies of the Karoo. The Highlands of Natal would be more suitable, and perhaps, according to the case, just inland from the coast (say 500 feet up). One must consider the whole family concerned. In Natal the language question can be neglected. 'B.' must consider the mental buoyancy of his case, both now and hereafter, from its clinical aspect. South Africa is at present suffering from depression, and we have our hosts of unemployed also. Coming from Canada 'B.'s' patient, the wife, and daughter, are probably workers, and all would therefore make themselves useful on a farm in, say, the Mooi River district of Natal, some 4,000 feet up. This is a beautiful country, peopled by some well-to-do English farmers, and with a glorious climate. Put a black mark against the Karoo."

INCOME TAX.

"X. Y. N. B." retired from a partnership on October 31st, 1922, retaining an appointment until April, 1923; he accounted for his liability for 1922-23 by paying on seven-twelfths of the Schedule D assessment and on the whole of the Schedule E assessment on the appointments. He has been assessed for 1923-24 in respect of the cash received by him for pre-October, 1922, bookings.

*** The basis of settlement of liability for 1922-23 is correct, but the assessment for 1923-24 is bad and should be discharged. Our correspondent is chargeable to tax in respect of professional earnings only for periods during which he was exercising his profession. The fact that the assessments were based on the amounts of cash received—on the implied assumption that those amounts were equivalent to the *value* of the respective year's bookings—does not alter the position as regards periods subsequent to October, 1922, in any way. The cash received by "X.Y.N.B." after that date represented receipts of capital so far as he was concerned—that is, the payment to him of fees, the tax on which has already been accounted for in the Schedule D assessments. If the continuing partner, who now has the whole of the practice, wishes to be assessed for his earnings on the "cash basis," he should include in his returns for assessment the whole of the cash receipts, including those passed on to our correspondent; his alternative is to make his 1923-24 return on the basis of the value of the whole of the gross bookings of the firm to October, 1922.

Medical Literature.

"R. M." has claimed to deduct £10 as the expense incurred in keeping himself supplied with current medical literature—BRITISH MEDICAL JOURNAL, *Public Health*, etc. The inspector of taxes refuses to allow any such expenditure unless it is

"a replacement of an old edition of a work by a newer edition of the same work."

*** The general principle was explained in a note published on June 14th last (p. 1063). We think that the inspector, in the case related, is taking a narrow view, and that an appeal to the Commissioners on the point would succeed. Where a manufacturer replaces a machine by another one it is not at all necessary that the second should be similar in type or pattern, and the replacement of one book by an entirely different one would be an exactly analogous case, if the same purpose is served and the new one necessary to keep up to date. Similarly with current periodicals of a professional or technical character. The professional or business man acquires in his training a certain stock of knowledge and literature; expenditure to extend the field or obtain some extraordinary skill would be capital expenditure, but in so far as money is laid out to maintain an attained standard of professional competence the expenditure is, in our view, properly allowable, whether incurred in the purchase of a professional periodical or a retail trade journal. We suggest that "R. M." might inform the inspector that he gives formal notice of appeal and would like to know as soon as possible the date for which the appeal meeting is likely to be fixed.

Renewals of Car and Apparatus.

"SURGEON" has replaced his old car by one of superior grade and inquires as to the allowance due (*a*) on this account, (*b*) in respect of purchases of apparatus, and (*c*) for subscriptions to medical societies.

*** (*a*) In so far as the "replacement" improved the grade of professional equipment, the expenditure must be regarded as representing a further outlay of capital, and the allowance due for income tax purposes is £380–£250=£130 only. (*b*) So long as an instrument or appliance is bought for the definite purpose of replacing one scrapped or out of date the expenditure (excluding capital outlay) is allowable, although the new instrument is not identical with that displaced. This principle was definitely admitted by official witnesses before the Royal Commission on Income Tax as applied to manufacturer's machinery, and applies necessarily to a practitioner's apparatus. (*c*) It is understood that under a recent decision of the Board of Inland Revenue such subscriptions would be allowed. We suggest that our correspondent might convey that suggestion to the local inspector and inquire whether he has not received an intimation to that effect from headquarters.

LETTERS, NOTES, ETC.

STRANGULATED INGUINAL HERNIA IN AN INFANT.

MR. WILLIAM EVERETT, F.R.C.S.Ed. (Barry), writes: Inguinal hernia is common in children of both sexes, but irreducibility and strangulation under 6 months are unusual. The case of strangulation in an infant of 3 weeks reported in your issue of July 12th by Mr. Simmonds recalls the following case that came under my care for operation a year ago. A male child, aged 5 weeks, a twin, was taken ill in the early morning of July 22nd, 1923, with vomiting and pain. The family doctor, who saw the child at 9 a.m. of the same day, correctly diagnosed the condition, and instructed the parents to take the child at once to the hospital for operation. However, the parents, who were Greeks, spent the better part of the day looking for the priest to baptize the child, and it was late in the afternoon when it was admitted to hospital. It was then suffering severely from shock, the pulse was uncountable, the features grey and sunken. There was a firm elastic ovoid swelling in the region of the left external abdominal ring, the size of a walnut, and showing a bluish coloration through the thin skin of a poorly nourished infant. Both testes were in the scrotum. The swelling could not be reduced at the time nor when the child was under anaesthesia for operation. A knuckle of bowel two to three inches long, deeply congested, was found tightly constricted by the neck of a congenital hernial sac. The bowel was viable, and the operation, which had only lasted a few minutes, was completed in the usual way. The bowels moved at the close of the operation. The child, however, survived for only twelve hours.

MR. PHILIP ROSENBLOOM (house-surgeon, Victoria Hospital, Burnley) writes: As Mr. F. A. H. Simmonds has pointed out in his account, this type of case is sufficiently rare to be worthy of report. A male infant, aged 14 days, was admitted to the Victoria Hospital, Burnley, on April 8th with the provisional diagnosis of intestinal obstruction. The parents stated that the child had been quite well until three days earlier, taking his feeds regularly, and having regular movement of the bowels. He then began to vomit. The vomit at first consisted of curdled milk, later of bile-stained fluid, and during the last twenty-four hours it had been faecal in character. For the previous three days absolute constipation had been present; no history of blood-stained anal discharge was elicited. The child was haggard and wizened, his cry was feeble, he had an obvious faecal odour about him, and he appeared to be moribund. The temperature was 97° F., respirations 40, and pulse 150. He weighed 5 lb. The abdomen was distended, no peristalsis was seen, and there was generalized resistance to palpation. On examining the hernial orifices I found a small round swelling the size of a pigeon's egg in the region of the right external abdominal ring, and accordingly diagnosed strangulated inguinal hernia. An operation was immediately performed by the honorary surgeon, Mr. J. H. Watson. Owing to the condition of the child local anaesthesia was employed, the right inguinal region being infiltrated with 1/2 per cent. novocain. On opening the sac blood-stained fluid escaped, and a knuckle of congested small bowel was found to be constricted at the external abdominal ring. The constriction was divided, the small bowel inspected and returned to the abdomen, and the sac was ligatured at the neck and removed. The wound was then closed. For the first twenty-four hours the child was kept on rectal salines, with sodium bicarbonate and glucose, and then gradually worked up on diluted and citrated milk with lactose. He made an uneventful recovery and was discharged on May 5th, after having put on 1½ lb. in weight. I must thank Mr. J. H. Watson for permission to report this case.

FOREIGN BODIES IN THE OESOPHAGUS.

"COUNTRY G.P." writes: At the close of Mr. E. B. Waggett's account of removal of a toothplate from the bronchus by inferior bronchoscopy, in your issue of July 26th (p. 145), he adds remarks about the occurrence of foreign bodies impacted in the oesophagus. He compares the safety of direct vision removal through the oesophagoscope with removal by oesophagotomy. Not all surgeons are as expert as Mr. Waggett with oesophagoscopes, nor do all surgeons possess them. I was present a few weeks ago at an autopsy on a child sent into hospital with a halfpenny impacted in the oesophagus. It was *x*-rayed, but the surgeon was unable to remove it through the oesophagoscope. In contrast, as regards the "danger" of oesophagotomy, I have myself in three urgent cases removed impacted articles in this way with success; one of these was very similar to the case recorded by Mr. Waggett and Major Fyffe.

HOLIDAYS FOR FACTORY GIRLS.

WE have received the following letter, signed on behalf of the Factory Girls' Country Holiday Fund by the Countess of Sandwich, the Bishop of London, Lady St. Helier, Mrs. Creighton, the Very Rev. Dr. Hertz (Chief Rabbi), the Rev. Dr. R. F. Horton, Mr. Frank Lloyd, and Dr. Mary Scharlieb:

"Will you allow us to make a very urgent appeal for funds to send working girls and women away for a short holiday? Many of those who are hoping to go during the next few weeks have never slept out of London for a single night. They have been saving up for months to get this unique privilege, and are even now counting the days in hot workshops and dusty factories till they can have if only one week of freedom and fresh air. The large amount of unemployment which still continues among men has made the women and girls in many cases the sole support of their families. It is obvious that these cannot pay much towards their holidays; obvious, too, that young people living in narrow streets and overcrowded rooms may be permanently injured in health if no change is possible. In weather such as this who can happily arrange or take a holiday without doing something to enable those less fortunate to have—for even one week—the good food and rest and refreshment that may set them up for long months of the winter's work? Subscriptions and donations will be thankfully received by the chairman of the executive committee, Mr. J. F. Green, or Miss Canney, 75, Lamb's Conduit Street, W.C.1.

INSURANCE COMPANIES AND THE PREVENTION OF DISEASE.

A GOOD deal has been heard of the efforts made by various insurance companies in the United States to provide their policy holders with information on the preservation of health. This practice has been followed also by the Wesleyan and General Assurance Society of Birmingham. It has issued pamphlets on first aid, on influenza, and on measles. It has now published two others: one on the house-fly and its relation to disease, giving quite sound if commonplace advice, and the other on infantile diarrhoea, in which the causes and prevention are discussed; here also the advice is good, though we question whether it is true to say that the majority of such cases can easily be prevented. We commend the advice as to treatment, which is to stop feeding and to send for a doctor. It is, perhaps, a little unfortunate that this last piece of advice is so qualified as to make the casual reader think that it will be necessary to send for medical aid only in severe cases. A case which seems mild at the beginning may easily become severe.

LOOSE-LEAF ACCOUNT BOOKS.

THE Kalamazoo Company has prepared a loose-leaf book designed to simplify the work of keeping the accounts associated with general medical practice. By this system all necessary accounts are arranged in exactly the required order, unnecessary ones being removed and filed separately. Opening a new account is effected by inserting another sheet into the book. These sheets contain spaces for recording visits paid, extras, and amounts chargeable each month. Quick and easy reference can be made to each account, and the risk of error is reduced to a minimum. The books are prepared in a large variety of sizes, and can be obtained from Kalamazoo, Ltd., 40, Grosvenor Place, London, S.W.1.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 26, 27, 30, and 31 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 28 and 29.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *104*.